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U. S. Department of the Interior
Bureau of Land Management
Kremmling Field Office
P. O. Box 68
Kremmling, CO 80459

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-120-2004-14 EA

PROJECT NAME: Wolford Mountain Travel Management Plan

PLANNING UNIT: Wolford Mountain/Resource Conservation Area

SUMMARY DESCRIPTION OF THE PROPOSED ACTION

The Bureau of Land Management (BLM), Kremmling Field Office, proposes to designate travel routes on approximately 33,150 acres of BLM lands north of Kremmling within the Wolford Mountain Project Area (see Map 1). The proposed route system would eliminate motorized or mechanized off-route travel, and would reduce the number of existing routes available for motorized or mechanized use; however approximately 135 miles of designated routes would remain available to the public for motorized or mechanized use during the non-winter use period.

The proposed action would improve soil, vegetation, and wildlife habitat conditions throughout the project area. An existing winter travel restriction would be expanded to include the entire project area to provide adequate habitat conditions during critical winter periods for pronghorn antelope, mule deer, and elk. Approximately 11 miles of existing BLM routes and 24 miles of county roads would remain open for snowmobile use. Reclamation of closed routes would be prioritized based on their impacts to the area's soil, water, and wildlife resources.

The proposed route system would complete a planning effort for the Wolford Mountain area originating with issuance of the 1984 Kremmling Resource management Plan (RMP), and continued in the 1988 Off-Road Vehicle Implementation Plan. The 1988 plan deferred implementation until a comprehensive travel route inventory could be completed. Final inventory efforts were completed in 2004, providing the necessary data to allow field office resource specialists to proceed with an environmental assessment to analyze the impacts of the proposed action and alternatives on the project area's natural and cultural resources.

PURPOSE AND NEED FOR THE PROPOSED ACTION

There is a need to complete travel management planning in the Wolford Mountain project area in order to:

- Address the increased use of motorized routes in the project area, and the resulting impacts to the area's natural and cultural resources.
- Follow through with implementation of the 1984 RMP and 1988 OHV Plan decisions to designate routes within the project area, applying current national management strategies and guidance for off-highway vehicle use on public lands.
- Identify appropriate actions to meet or maintain public land health standards in the project area.
- Provide for clear delineation of and appropriate use on designated routes through informational kiosks, maps, signing, and local educational forums.

ACRONYMS AND TERMS USED IN THIS DOCUMENT:

ACEC	Area of Critical Environmental Concern
ATV	All Terrain Vehicle (commonly called a 4-wheeler)
BLM	Bureau of Land Management
CDOW	Colorado Division of Wildlife
CFR	Code of Federal Regulations
CNHP	Colorado Natural Heritage Program
CNRG	Colorado Natural Resource Group
CRWCD	Colorado River Water Conservation District
DFC	Desired Future Condition
EA	Environmental Assessment
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
4WD	Four-Wheel Drive Vehicle
GIS	Geographic Information System
GPS	Global Positioning System
KFO	Kremmling Field Office
OHV	Off-Highway Vehicle
ORV	Off-Road Vehicle
RMP	Resource Management Plan
RNA	Research Natural Area
R&PP	Recreation and Public Purposes
ROD	Record of Decision
ROS	Recreation Opportunity Spectrum
SLB	State Land Board
TMP	Travel Management Plan
T&E	Threatened & Endangered Species
WAPA	Western Area Power Administration
WSA	Wilderness Study Area

Kremmling Resource Area / Kremmling Field Office: The area of public lands, approximately 400,000 acres in size, identified in the 1984 RMP administered by the (then) Kremmling Area Office. In 1998, the BLM adopted two-tier organizational levels in several states, including Colorado. As a result of this restructuring, the Kremmling Area Office and the Kremmling Resource Area became synonymous with the Kremmling Field Office.

OHV vs. ORV**:** For many years the term "off-highway vehicle" (OHV) has been used by the public, industry, and the BLM interchangeably with the term "off-road vehicle" (ORV). However, only the term "off-road vehicle" (ORV) has a legally established definition in the Presidential Executive Orders and the BLM's related 43 CFR 8340 regulations. In general, throughout this document the term "off-highway vehicle" (OHV) will be used, partly because it is a more commonly used term, but primarily because the regulations address vehicles which use roads and trails on BLM-administered land, and are therefore, not just "off-road".

Project Area: The Wolford Mountain travel management project area, an area of approximately 42,600 acres in size (as outlined on Map 1). Approximately 33,150 acres or 77% of the project area consists of BLM public lands.

Project Sub-Area: A portion of the project area, which possesses characteristics which make it different from other areas within the project area. Within the Wolford Mountain project area are three sub-areas delineated by the Interdisciplinary Team (IDT) for their distinct natural and physical resource differences and recreation use patterns. These sub-areas are Wolford Mountain North, Wolford Mountain West, and Wolford Mountain South (see Management Goals and Objectives and Map 2 for more information and descriptions of the project sub-areas).

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BACKGROUND AND INTRODUCTION

Location and Setting: Map 1 outlines the project area. The project area lies north of the confluence of the Colorado River, Blue River, and Muddy Creek watersheds at Kremmling, in the western portion of the Middle Park Basin in north-central Colorado. The southern boundary of the project area lies immediately north of and adjacent to the Town of Kremmling. The western boundary lies primarily along U.S. Highway 40, but includes some scattered segments of BLM lands west of the highway. The northern boundary lies approximately 13 miles north of Kremmling and is bounded by lands administered by the Colorado State Land Board. The eastern boundary is marked by BLM lands immediately west of County Road 2, but also includes some small parcels of BLM lands adjacent to County Road 2 in the northeast portion of the project area. U.S. Forest Service lands are in proximity to the project area to the west, north and east, ranging from 3 miles distant on the east to 7 miles distant on the west. Table 1 below indicates the total acres of BLM public lands and of other land ownership within the project area:

Table 1 - Project Area Land Ownership

LAND OWNERSHIP	ACRES
BLM	33,152
Private	8,546
State	934
Total Acres	**42,632**

Table 2 below indicates the total miles of routes on non-public lands within the project area:

Table 2
Miles of Routes on Other Ownerships or Other Jurisdictions

Ownership or Jurisdiction	Miles
County	33.36
State	6.45
Private	4.79
TOTAL	**44.60**

County: These are the county roads claimed and maintained by Grand County as part of the County road system. The County may designate county routes for OHV and snowmobile use through authority granted them by the State. The BLM coordinates with the county to allow ATV and snowmobile use on County roads to provide access to and across public lands.

State: The BLM is currently coordinating with the Land Board to provide reasonable access across State lands to public lands.

Private: These routes are located on private property. Only routes which connect to existing BLM routes are included. The BLM routes that connect to the private routes would be designated and BLM has considered the need for access to or from BLM lands for private property access or administrative needs for permittees.

Included on the northern edge of the project area is the Kremmling Cretaceous Ammonite Site, a Research Natural Area (RNA) and an Area of Critical Environmental Concern (ACEC).

Notable physical landmarks and popular outdoor recreation destination sites include the 1,447 acre Wolford Mountain Reservoir, located 6 miles north of Kremmling, and Wolford Mountain, which lies immediately east of the southern portion of the reservoir, approximately 4 miles north of Kremmling.

Topography, vegetation, and climate vary throughout the project area. Elevations range from 7,350 feet near Kremmling to 9,360 feet at the peak of Wolford Mountain. There are numerous small basins which drain into Muddy Creek in the western portion of the project area, and a few basins along the eastern perimeter of the area which drain to the east into Troublesome Creek. These basins are characterized by relatively gentle bottoms and infertile soils. Dry ridges with steeper slopes separate the basins. Vegetation is predominantly sagebrush steppe, with some coniferous forest atop Wolford Mountain. Occasional scattered stands of aspen dot the landscape along some of the ridges, and a few stands of cottonwoods and willows can be found in some of the basin bottoms. Summer months are warm and dry; however the area typically experiences frequent afternoon storms in July and August. These storms are more intense in the northern portion of the project area. Winters are usually cold with lower snow accumulation in the southern portion of the project area, while the higher elevation areas in the northern portion of the project area experience warmer temperatures but higher accumulations of snow.

The project area lies at the western end of Grand County. The county has experienced population growth of 62% since the 1990 census, with the latest 2003 estimate showing a population of 13,173 residents. Most of this growth has occurred at the east end of the county, near the Winter Park ski area. The nearest incorporated municipality to the project area is Kremmling, with a population of 1,578. Kremmling is also the largest incorporated municipality in the county and has experienced a 26% increase in population since the 1990 census. The towns of Hot Sulphur Springs, Parshall, Granby, Grand Lake, Winter Park, Tabernash, and Fraser make up the remaining communities within Grand County. The project area lies within a 2-hour drive of the Denver metropolitan area and other Front Range communities. Throughout the late 1990s the Front Range was experiencing rapid population growth, and, although this growth has slowed somewhat over the past few years, Grand County is still experiencing increased visitation as a result of its proximity to the Front Range.

Approximately 74% of Grand County consists of U.S. Forest Service, BLM, and State lands, and recreation is a major attraction on these lands. The 1984 RMP recognized the recreation value of Grand County's public lands in noting that "*Recreation on government administered lands within the resource area, regardless of agency administration, is becoming more important because these lands are close to the Denver metropolitan area and other Front Range communities"*. Current recreational opportunities in Grand County include hiking, horseback riding, trail running, OHV riding and mountain biking during the summer months; and snowmobiling, downhill skiing and cross-country skiing during the winter months. Traditional recreation activities such as hunting, fishing, boating, camping, and driving for pleasure also attract large numbers of visitors, local residents, and second homeowners to Grand County. A few of the major recreation attractions include Winter Park Ski Area, Rocky Mountain National Park, Arapaho National Recreation Area, the Headwaters Historic and Scenic Byway, four sizeable reservoirs (including Wolford Mountain reservoir), and the Upper Colorado River

Special Recreation Management Area. U.S. Forest Service lands provide a wide range of non-motorized recreation opportunities within a 30-45 minute drive of the project area. Notable destination spots for these opportunities include the 47,140 Sarvis Creek Wilderness, the 72,180 acre Mt. Zirkel Wilderness, and the 80,000 acre Troublesome Roadless Area.

History of Travel Management Planning in the Project Area: Since the Kremmling RMP and ROD were issued in 1984 there has been a series of efforts to plan and designated routes in the project area. A brief chronology of these efforts follows:

- In 1984, the Kremmling Resource Area RMP and ROD provided initial general direction to manage the motorized use that was occurring at the time in the Wolford Mountain "Resource Conservation Area" (RMP ROD, Resource Decisions, Table 2-1, Pg 13).

- In 1988, A Federal Register Notice placed the Wolford Mountain/Resource Conservation Area, a 25,200 acre area north of Kremmling, under a "Limited to Designated Roads and Trails" off-road vehicle designation.

- In 1988, an ORV Implementation Plan was prepared to identify actions necessary to implement ORV designations, and to manage the BLM lands within the resource area for ORV use in accordance with the general direction provided in the RMP. The objectives noted for this plan were to:

    - Provide for public needs or demands
    - Protect natural resources and the safety of public land users
    - Minimize conflicts among various users

  In the 1988 ORV plan, the Wolford Mountain/Resource Conservation Area was noted as an area where intensive ORV use was occurring. The plan proposed limiting ORV use to designated roads and trails year around to protect soil, watershed, wildlife and rangeland values. However implementation of this portion of the plan was deferred until a more thorough inventory could be completed. In discussing the deferred action the Wolford Mountain area was referred to as *"Kremmling's backyard ORV playground"*, with numerous open roads and trails providing opportunities for nearly unrestricted use by 4x4s, ATVs, and dirt bikes/trail bikes. The area was also recognized as *"an important recreation resource for motorized vehicle use in both roaded and semi-primitive motorized settings while sensitive watershed, soil and wildlife habitat resource values must be protected, especially during winter months for big game and spring runoff to minimize soil erosion"*. Limited designations were to be put into effect following a completed route inventory of the area.

- In 1997, an initial inventory of routes was conducted using GPS technology. The routes were inventoried for location but no condition assessments were performed.

- In 2001, an effort was begun with the intent of developing a comprehensive travel management plan, which would designate routes for the entire area of BLM lands managed by the Kremmling Field Office. A Federal Register Notice was published documenting this intent and public meetings and formal scoping were conducted. During the winter of 2001/2002 field office resource staff, concerned about the growing popularity and increased use of routes on BLM lands in the Wolford Mountain area north of Kremmling, expressed a

strong need to accelerate and complete planning efforts in this smaller area, before proceeding with travel management in other areas. Based on this concern, a decision was made to complete a separate plan for the Wolford Mountain area and begin implementation as soon as possible.

- An inventory was started in 2002 of all two track routes in the area to determine location and general condition of the existing routes. The inventory was continued in 2003 and 2004 to include single track routes commonly used by motorcycles.

- In late 2003 and throughout most of 2004 an Interdisciplinary Team (IDT) of BLM resource specialists conducted a series of internal meetings and public meetings/workshops to solicit comments on a Proposed Action to designate routes in the Wolford Mountain area from various agencies, permittees, individuals and stakeholder groups. The IDT identified key issues and concerns, developed alternatives, and proceeded with an environmental assessment.

Key Issues and Concerns: The IDT identified numerous issues for the Wolford TMP from comments received through internal scoping and an extensive public involvement process. Details of the public involvement process are provided in Appendix 1. Forums in which interested parties provided comments included open houses, informal meetings with stakeholders and local agency officials, a presentation to the Northwest Resource Advisory Council, and formal public meetings/workshops. The IDT developed a mailing list of over 100 interested parties. Addressees on this mailing list were kept abreast of planning efforts and encouraged to submit written or email comments throughout the project. A large number of written comments and emails were received from these various forums.

As a result of the internal and external scoping process, four key issues were identified for the Wolford Travel Management Plan:

1. **Providing for access to meet a variety of motorized and non-motorized recreational and non-recreational needs.** Several comments focused on the need to provide for ATV, 4WD and motorcycle use on the public lands close to Kremmling. There is a history of high motorized use in this area and even many non-motorized users recognize the need to continue this use within the constraints of a designated route system. Numerous comments also noted the need to maintain "quiet areas" by providing for non-motorized use, and several comments stated the need to maintain access for administrative purposes, such as maintaining fences and watering facilities, repairing utility lines, and monitoring the area's natural and cultural resources.

2. **Protecting the area's natural, cultural and paleontological resources.** A number of comments recognized the need to limit access where appropriate to protect area resource values. The Wolford area serves as an important winter range for a variety of wildlife species, and contains important breeding and nesting habitat for Greater sage-grouse. A high number of cultural and paleontological sites are located within the project area. Much of the area's soils are designated as 'sensitive', and soil erosion is evident in numerous locations. Several comments also noted the need to protect the area's riparian zones, and not degrade area water quality.

3. **Providing for a designated route system which is safe, manageable (meets national OHV strategies and direction), and manages user conflicts.** A number of comments emphasized the need for the BLM's Kremmling Field Office to be able to sign, maintain, and enforce regulations on the travel route system. Comments also included the need to minimize or eliminate conflicts from motorized and non-motorized users. For example, there is an existing conflict between motorized users and target shooters, at a location where there is an existing shooting range and high OHV use.

4. **Providing for a designated route system which is adaptable to meet the area's current and future recreation and non-recreation motorized and non-motorized demands, while maintaining or improving land health.** Internal and external comments emphasized the need to provide for a travel route system which can adapt to changes in technology, new information, and future recreation and non-recreation demands on the area's public lands. Comments stressed the need to monitor the impacts of the selected travel route system and make changes in designations where appropriate to maintain or improve land health. Several comments included the need to ensure that the area's lands meet public land health standards.

Management Goals and Objectives: In an effort to comply with good land use planning practices and the BLM Land Use Planning Handbook, the IDT divided the project area into three project sub-areas (see Map 2), and developed desired outcomes expressed in terms of management goals and objectives. These goals and objectives were based on the key issues identified above, current RMP land use priorities and resource management objectives for the area, the area's unique physical features, and such guiding BLM documents as:

- *National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands.*
- *Recreation Management Guidelines to Meet Public Land Health Standards on BLM Lands in Colorado*
- *Colorado Public Land Health Standards*

Some management goals and objectives were similar in all three of the sub-areas; however these smaller areas helped the IDT to focus on individual routes within the context of the different characteristics of each area throughout the designation process. In designating routes for the Proposed Action and all of the action alternatives, the IDT applied a process which considered each route based on its individual characteristics or merits, and its relationship to sub-area goals and applicable land management mandates such as the Endangered Species Act. This process also complemented the IDT's extensive knowledge of the project area and its network of routes, while ensuring that NEPA guidance was closely followed. For example, the IDT applied their detailed knowledge of each sub-area's resources when designating routes at the sub-area level; however they also frequently paused to look at and review these designations at a broader landscape scale. In conducting this broader review the IDT considered resources and potential cumulative impacts to these resources within the entire Muddy Creek Watershed and beyond, including other BLM, State and U.S. Forest System lands surrounding the project area

Descriptions of the three sub-areas and their associated goals are as follows:

- Wolford Mountain North: This project sub-area is bounded on the south by CR 25. It extends west to US Highway 40, and north to the northern boundary of the project area. The Wolford Mountain North sub-area is characterized by a predominantly open landscape of high ridges and dry sagebrush-dominated bottoms. It contains important habitat for Greater sage-grouse and a variety of other wildlife species. The sub-area includes the Cretaceous Ammonite Site ACEC, as well as a number of other paleontological sites and cultural resource sites. It features such landmarks as 'Hay Gulch', 'Gunsight Pass' and 'Twin Peaks'. Although it receives low motorized and non-motorized use throughout much of the year, use increases considerably during the annual fall hunting seasons.

  Management goals and objectives are focused on preserving this area's natural and cultural resource values while maintaining some access for users to interpret and enjoy those values. Goals include enhancing protection of the Ammonite Site; protecting and improving habitat for Greater sage-grouse and the area's other wildlife species; restoring soil and vegetation health where undue erosion has occurred from soil disturbing activities; maintaining and improving riparian health; maintaining and improving water quality; maintaining some motorized and non-motorized recreational access; and maintaining administrative access where needed.

- Wolford Mountain West: This project sub-area is bounded on the north by CR 25. It extends west of U.S. Highway 40 to include all of the BLM public lands, and is bounded on the south by the WAPA power line access road south of Wolford Mountain, and on the east by CR 224. The Wolford Mountain West sub-area includes such predominant physical features as Wolford Mountain, Little Wolford Mountain, and Wolford Mountain Reservoir. In addition to being the largest sub-area within the project area, this sub-area also has the most diverse landforms and vegetation, and provides unique opportunities for motorized and non-motorized recreation. It contains important habitat for Greater sage-grouse, and includes Osterhout milkvetch (*Astragalus osterhoutii*), a federally listed endangered plant species. Wolford Mountain is a critical habitat area for wintering elk and mule deer and its timbered slopes provide habitat for a variety of wildlife. The entire mountain is an important site of paleontological resources, and there are a number of cultural sites with the sub-area. The Wolford Mountain summit provides superb vistas of the Wolford Reservoir and the Gore Range to the west. The mountain also provides a local hiking opportunity that is usually reserved for areas on U.S. Forest System lands which surround the project area approximately 3-7 miles to the west, north, and east; however this opportunity is provided earlier in the year when the surrounding forest lands are typically under a blanket of snow. A motorcycle trail with a history of use dating back to the late 1970s crosses the peak and provides a unique and challenging single-track motorized experience. A private inholding, which serves as the site for a commercial cellular tower, is located on the northern portion of the Wolford Mountain summit. Access to this site across BLM lands is provided by an administrative easement on an existing road located on the eastern slope of the mountain.

  Management goals and objectives include protecting the sub-area's natural, cultural, and paleontological resources; protecting and improving habitat for Greater sage-grouse; providing for a variety of motorized and non-motorized recreation opportunities with higher emphasis on non-motorized activities in the vicinity of Wolford Mountain; restoring soil and

vegetation health in areas of disturbed and eroded soils; maintaining and improving riparian health; maintaining and improving water quality; reducing or maintaining sediment loads to the Wolford reservoir; reducing salt loads on BLM lands in the sub-area west of U.S. Highway 40; and maintaining administrative access for a variety of permitted uses.

- Wolford Mountain South: This project sub-area is bounded on the north by the WAPA power line access road and CR 224, on the west primarily by U.S. Highway 40 (also includes an unroaded parcel of BLM public lands west of U.S. 40), on the south by the project area boundary, and on the east by BLM lands extending closest to but west of CR 2. The sub-area includes such local and well known landmarks and physical features as the 'Kremmling Cliffs' (a notable land feature closely associated with Kremmling), 'Cow Gulch', 'Horse Gulch', 'Red Mountain', and the 'Lower Muddy Creek Mitigation Area'. This sub-area presents the greatest management challenge since it is an area of high motorized use in close proximity to Kremmling, while being an area of key winter habitat for a number of species (e.g. pronghorn antelope, elk, mule deer, and Greater sage- grouse) during severe winters. It includes a small shooting range area that is located within an area of intense OHV use. Because the sub-area is readily accessible from Kremmling, it is subject to a high number of illegal dumping incidents. The sub-area also contains a number of cultural and paleontological resource sites, and includes important sage grouse breeding habitat.

  Management goals and objectives for this sub-area include providing for higher levels of motorized and non-motorized recreation opportunities, while managing user conflicts; protecting and improving Greater sage-grouse habitat; protecting and improving important winter habitat; reducing or eliminating illegal dumping; restoring soil and vegetation health in areas of disturbed and eroded soils; maintaining and improving water quality; protecting riparian areas within the Lower Muddy Creek Mitigation Area and Cow Gulch; and protecting the sub-area's natural, cultural, and paleontological resources.

Actions Common to all Alternatives: Several actions which the IDT included in all alternatives, except the Current Use Alternative, are as follows:

Limited to Designated Roads and Trails – All motorized travel would be Limited to Designated Roads and Trails, except in a small high density play area. This action would expand the 1988 OHV plan which sought to designate routes in approximately 76% of the project area for motorized travel. This would also correlate to the BLM's directive to transition from primarily Open areas to a managed transportation system.

Off Road Parking and Activities – Driving vehicles off a designated road to park for camping, picnicking, or hunting use would be limited to a maximum of 50 feet from the centerline of the road. No motorized travel beyond 50 feet of a designated route would be allowed for game retrieval.

Winter Snowmobile Limitation Area – The current winter snowmobile restriction area would continue in all alternatives. The current limitation restricts snowmobile use to designated routes from December 1 through April 30. The annual beginning date would be changed from December 1 to December 15 due to the addition of a late big game hunting season in the area and the need to provide hunter access during this season to meet CDOW big game harvest objectives. The original limitation was put in effect in 1987 to provide protection and security

for big game in critical winter range areas. This area includes all BLM lands in the project area south of CR 25 and east of U.S. Highway 40. The routes designated for snowmobile use during the restriction are CR 224, CR 25 and a portion of CR 22. The limitation restricts snowmobiles operating on snow to these designated and marked routes. No cross country travel by snowmobiles is allowed in the current limitation area. It does not restrict other motorized vehicles and in moderate-to-low snow years motorized vehicles could access many of the areas where big game is wintering.

Inclusion of Other Motorized Vehicles in Winter Limitation - The winter travel restriction would be expanded to include all motorized vehicle travel. The limitation period would be modified to extend from December 15 through April 15 the following year. All motorized travel would be limited to designated routes. Snowmobiles would be restricted to operating on 6 inches or more of snow and only on the designated routes. The Field Manager has the authority to modify the dates and type of vehicle use allowed on an as-needed basis, depending on winter conditions, after consulting with the BLM wildlife biologist, other BLM resource specialists, and the CDOW.

Administrative Access – This designation would limit motorized access on these routes to BLM authorized uses only. BLM employees, permittees, contractors, and personnel from other agencies would be allowed motorized access for resource management, maintenance, inventory, monitoring, or compliance purposes. Public use on these administrative routes would be limited to non-motorized access for foot, horse and mountain bike. Administrative use for right-of-way or other permit holders would be limited to authorized or permitted activities only. No motorized recreational use would be authorized on these routes. Winter access would be limited to emergency-use-only subject to prior approval by the Field Manager.

Cretaceous Ammonite Site - The current 40 acre closure to motorized use would be expanded to include the entire 200 acres within the designated site, with one exception on the existing road in the east end of the area. In the High Use Alternative this route would be Open-Limited and in the Proposed Action this route would be for administrative use only. The remainder of the 200 acre area would be limited to foot access only and closed to horse and bicycle use. Exceptions could be granted by the Field Manager for scientific study. A physical closure, such as buck and rail or barbed wire fencing, would be installed to provide added protection to the site.

Designation of a High-Density 'Play Area' – The Proposed Action and each of the action alternatives includes a high-density play area, located in the Wolford Mountain South sub-area where high ATV and motorcycle use is currently occurring. The designation of a play area was made by the IDT and carried through each alternative following recommendations from various groups, including the environmental community. The play area ranges in size from 18.8 acres in the Low Use Alternative, to 19.8 acres in the Proposed Action, to 36.5 acres in the High Use Alternative.

Rock Crawl Area – The Kremmling Field Office has received a request from a local OHV club for designation of an area for a technical four wheel drive trail and competitive rock crawls. The proposed location for this activity is in the vicinity of the proposed high-use play area and is shown on the alternative maps. Designating an area and allowing for this use would comply with the multiple use mandate of FLPMA, while confining this use to a single location where it

could be effectively managed. A site specific environmental assessment would still be required upon receipt of a detailed use proposal by the group.

Target Shooting - The existing target shooting area north of the Kremmling landfill would be closed due use conflicts with OHV use in the area. This closure would be subject to requirements in 43 CFR 8364.1 and would be implemented through a Federal Register Notice. BLM would coordinate with local partners and stakeholders to locate, develop, and manage a suitable replacement area which would meet current safety and health standards.

Implementation and Monitoring Plan – The Proposed Action and any of the action alternatives would incorporate an implementation and monitoring plan. This plan would be developed in conjunction with and subject to the travel route system chosen in the Record of Decision, would be updated annually, and would include, but not be limited to, such activities as signing, information and education forums, reclamation of closed routes, monitoring of impacts associated with continued use on designated open routes, location and planning for a new shooting range, etc.

Summer Use Period – The summer use period is the portion of the year that is not under the winter limitation. In the action alternatives this period will extend from April 15 through December 15 of each year. Use during the summer period is primarily by wheeled vehicles operating on soil, while winter use is primarily by snowmobiles operating on snow.

PROPOSED ACTION

The Proposed Action is to designate travel routes for use by motorized and non-motorized users. The designated routes would be signed on the ground, and maps would be prepared for kiosks at primary entry points and for hand distribution to users of the area. Bicycles and other mechanized vehicles would be limited to designated motorized and administrative routes. About 138 miles of routes would be available to the public for motorized use during the non-winter use periods. This is a reduction of approximately 40% when compared to the 230 miles available in the Current Use Alternative. No cross country travel or use on Closed/Reclaimed routes would be allowed for mechanized vehicles. Reclamation of closed routes would be prioritized based on wildlife habitat productivity, soil loss potential, cultural resource impacts, or other resource protection needs. This alternative strives to provide for a mix of quality motorized and non-motorized recreation experiences and opportunities. The emphasis for natural resource management would be to improve vegetation conditions across all three sub-areas through closures on routes with known resource damage or conflict. The winter seasonal closure area would be expanded to the entire project area, doubling the size of the existing winter closure. About 9 miles of BLM routes and 26 miles of county roads would be open for snowmobile use.

ALTERNATIVES TO THE PROPOSED ACTION

Four alternatives to the Proposed Action, including the Current Use Alternative, were developed by the IDT from comments and issues. Three of these alternatives were brought forward for analysis. One alternative, the Moderate Use Alternative, was very similar to the Proposed Action; therefore this alternative was dismissed from further analysis. In developing and

assessing the Proposed Action and alternatives, the team considered the management goals for each sub-area in addition to comments submitted by stakeholders, State and local agencies, and other interested parties. The three alternatives to the Proposed Action that were analyzed are as follows:

Current Use (No Action) Alternative: This alternative would postpone changes to the management of motorized and non-motorized recreation use on the Wolford Mountain area until the Resource Management Plan (RMP) is either amended or revised. Under this alternative it is expected that motorized use would continue to increase on existing routes and, due to increased demand the establishment of additional user-created routes occur. About 230 miles of routes would be available for motorized recreation in this alternative. Any proposed closures or restrictions of existing OHV routes to prevent resource damage or user conflicts would be reviewed and implemented subject to special rules authorities provided under the Code of Federal Regulations (CFR) 8340 Off-Road Vehicles. Formal proposals for new roads or trails would be evaluated in a site-specific environmental assessment. Cross country travel by foot, horse and bicycle would continue to be allowed. The existing snowmobile limitation area and time period would remain in effect.

Low Use Alternative: This alternative would provide for minimal motorized recreation opportunities within a 'Limited to Designated Roads and Trails' management scenario. Bicycles and other mechanized vehicles would also be limited to designated routes. Approximately 38 miles of routes would be designated and available for motorized recreation. The number of miles available to the public for motorized use during the non-winter use periods would be reduced by about 83% when compared to the Current Use Alternative. The primary management emphasis would be the protection and enhancement of natural resource values through a substantial reduction in the travel routes available for motorized or mechanized use. Reclamation of closed routes would be prioritized based on wildlife habitat productivity, soil loss potential, cultural resource impacts, or other resource protection needs. Non-motorized recreation activities would be encouraged and quiet zones would be created around Wolford Mountain and the Twin Peaks area. The winter seasonal closure area would be expanded to the entire project area, doubling the size of the existing winter closure. About 3 miles of BLM routes and 11 miles of county roads would be open for snowmobile use.

High Use Alternative: This alternative would provide for the highest levels of motorized and mechanized recreation opportunities within a 'Limited to Designated Roads and Trails' management scenario. About 196 miles of routes would be designated and available for motorized and mechanized recreation to provide a wide variety of riding opportunities. The total number of routes available to the public for motorized use during the non-winter use periods would be reduced by 15%, when compared to the Current Use Alternative. The emphasis for natural resource management would be to maintain the integrity of existing vegetation with some improvements to conditions through closures on routes with resource damage or serious visitor conflict. Reclamation of closed routes would be prioritized based on wildlife habitat productivity, soil loss potential, cultural resource impacts, or other resource protection needs. The winter seasonal closure area would be expanded to the entire project area, effectively doubling the size of the protection area. About 62 miles of BLM routes would be open for snowmobile use, primarily in the area north of CR 25. All county roads in the project area would remain open to all uses throughout the year.

SUMMER USE: The following table compares the miles of various types of routes by alternative, during the summer use period. Refer to Maps 3-6 for complete overviews.

Table 3 -Miles by Alternative by Route Type During Summer Use Period

ROUTE TYPE	INVENTORY STATUS	DESIGNATIONS BY ALTERNATIVE		
	CURRENT USE	LOW USE	HIGH USE	PROPOSED ACTION
LIMITED				
Open-Limited	175.33	*30.18	177.79	**104.84
ATV	20.64	6.24	6.38	16.05
Motorcycle	34.52	1.95	***12.12	***17.08
Subtotal - Motorized	**230.49**	**38.37**	**196.29**	**137.97**
Administrative	0.00	74.99	18.59	28.61
Foot Only	1.46	3.55	0.51	1.04
CLOSED				
Closed/Rehab	4.20	119.24	20.76	68.60

INVENTORY STATUS: During inventory, routes were assigned designations based on natural physical constraints, such as width, and current use.

LIMITED: There are a variety of limitations that would be used to manage use on BLM routes. *They include:*

Open-Limited: The least restrictive travel designation which includes graveled roads, maintained native material (dirt) roads, and primitive four-wheel drive roads. These routes can accommodate conventional sized motor vehicles, such as cars and trucks, but are also open for use by ATVs, motorcycles, bicycles, horses, and foot travel except during the winter limitation from December 15 through April 15 the following year.

ATV: These routes are intended for use primarily by ATVs (including 3-wheelers) but are also available for motorcycles, bicycles, horses, and foot travel. The maximum width of any motorized or mechanized vehicle allowed on these routes is 50 inches.

Motorcycle: Includes routes that are intended for use primarily by single track motorcycles but are also available for use by bicycles, horses, and foot travel.

Administrative: Routes designated for authorized motorized use only on public lands for access to power lines, grazing facilities and improvements, radio and cell phone towers, private land, and other uses where the BLM has issued a right of way, easement, or permit. They are available to the public for foot, horse and bicycle travel.

Foot Only: These routes are intended for foot travel only. No motorized, mechanized or horse use is allowed.

CLOSED: Routes closed to motorized and mechanized use due to resource concerns or conflicts. They are available to the public for foot and horse travel and are closed to bicycle use. These routes would be prioritized for signing, physical closure structures, and would be reclaimed or allowed to naturally revegetate.

* 1.60 miles would be closed seasonally to protect critical sage grouse breeding habitat.
** 2.64 miles would be closed seasonally to protect critical sage grouse breeding habitat
*** 2.30 miles of motorcycle trail would be closed seasonally to protect raptor nesting habitat & provide solitude for hikers and joggers in the spring and fall.

WINTER USE: Table 5 and 6 below indicate the miles of route types in the current winter restriction and the proposed winter restriction expansion. See Maps 7-10 for a complete overview.

Table 5 - Existing Winter Limitation Area (15,811 acres)
Miles by Alternative by Route Type

ROUTE TYPE	CURRENT USE
Open	0
Snowmobile Only	0
Administrative	0
Closed / Non-motorized	140.0
BLM Miles	**140.0**
County - Snowmobile	7.3
County - Open	13.6

Table 6 - Proposed Expanded Winter Limitation Area (33,152 acres)
Miles by Alternative by Route Type

ROUTE TYPE	CURRENT USE	LOW USE	HIGH USE	PROPOSED
Open	96.24	.45	62.16	0
Snowmobile Only	0	0	0	7.23
ATV	0	.97	0	0
Administrative	0	1.21	.5	2.10
Closed / Non-motorized	140.02	233.63	173.60	226.93
BLM Miles	**236.26**	**236.26**	**236.26**	**236.26**
County - Snowmobile	7.30	10.69	0	26.07
County - Open	23.13	19.74	30.43	4.36

Open routes are open to all vehicles through the winter.

Snowmobile Only routes are open only to snowmobiles operating on 6 inches or more of snow between December 15 and April 15 of the following year.

County – Snowmobile are county roads that are either not winter maintained or designated by the Board of County Commissioners as a county snowmobile route. These routes are open to all vehicles if less than 6 inches of snow exists and limited to snowmobiles only when there are 6 inches or more of snow.

County – Open are county roads open to all vehicles through the winter. No travel is allowed off of these designated routes even if no snow exists in the area in order to provide protection for wintering big game.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD:

A Moderate Use Alternative was initially developed. As the Proposed Action was developed from external and internal input, it became apparent that the Moderate Use Alternative was so similar to the Proposed Action, that proceeding with a separate analysis would have been of little/no value in comparing environmental effects. An alternative was also submitted by the Friends of Wolford Mountain on April 2, 2004 as the IDT was developing the Proposed Action. The IDT felt that this alternative fell between the Low Use Alternative and the Proposed Action in the range of alternatives. Although this alternative (Friends Alternative), which divided the project area into subunits and proposed actions primarily focused on resource protection, was not carried forward for analysis, the IDT continually checked the Proposed Action against this alternative as it was refined. For instance, the Proposed Action includes a *play area* at a location where high motorized use is presently occurring in the Wolford Mountain South sub-area. The Friends Alternative also includes a similar *play area* in the same location; however the *play area* incorporates a larger site in the Friends Alternative. The management objectives and desired future conditions for the project sub-areas were also similar to the management objectives and desired future conditions for the subunits in the Friends Alternative.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Kremmling Resource Management Plan (RMP), Record of Decision (ROD)

Date Approved: December 19, 1984; Updated February 1999

Decision Number/Page: 9. Off-Road Vehicle Management, Table 2-1, ORV Designations

CONFORMANCE TO OTHER PLANS: The Proposed Action follows through with the *1988 Off-Road Vehicle Implementation Plan*, which limited motorized use to existing routes but deferred implementation subject to a completed inventory of the existing routes.

CONFORMANCE TO STATUTES, REGULATIONS, AND POLICIES: The Proposed Action conforms to the following statutes, regulations, policies, and guidelines:

FLPMA: In *Declaration of Policy, Section 102. (a), (8)* of the 1976 Federal Land Policy and Management Act, Congress set forth the policy statement that *"it is the policy of the United States that the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archaeological values; that where appropriate, will preserve and protect certain public lands in their natural condition; that will provide for fish and wildlife and domestic animals; and that will provide for outdoor recreation and human occupancy and use"*

National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands: In 2001, the BLM issues a national strategy for providing guidance to *"determine and implement better on-the-ground motorized off-highway vehicle management solutions designed to*

conserve soil, wildlife, water quality, native vegetation, air quality, heritage resources, and other resources, while providing for appropriate motorized recreational opportunities."

Instruction Memorandum No. 2004-005: In October of 2003, the BLM, through an Instruction Memorandum, emphasized policy, provided clarification, and additional guidance for management of motorized and other access on the public lands in accordance with existing law, executive orders, proclamation, regulation, and policy. Within this context, this memorandum states that *"Selection of a network of roads and trails should be performed for all limited areas in each RMP. This requires establishment of a process that includes selecting specific roads and trails within the limited area or sub-area and specifying limitation(s) placed on use."*

Standards for Public Land Health: In January 1997, Colorado Bureau of Land Management (BLM) adopted the Standards for Public Land Health (Standards) in all of their RMPs. The Standards describe natural resource conditions needed to sustain public land health and relate to all uses of the public lands. They encompass upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific resource elements listed below. A copy of the Standards is available for review at the Kremmling Field Office.

Recreation Management Guidelines to Meet Public Land Health Standards: In December 2000, Colorado BLM issued Recreation Management Guidelines (Guidelines) to help achieve and maintain healthy public lands as defined by the Standards for Public Land Health. These guidelines are tools, methods, and techniques that can be used by managers to maintain or meet the Standards. A copy of the Guidelines is available for review at the Kremmling Field Office.

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: In 2002, the U.S. Environmental Protection Agency redesignated the entire state of Colorado as "in attainment/maintenance" of federal air quality standards. Colorado was the first state in the nation to be violation free and to achieve this designation. Air quality in the Wolford Travel Management Area is not specifically monitored, but is believed to be good. The Wolford Travel Management Project is located within Middle Park, a mountain valley that is bordered by a national park and wilderness areas which have been designated Class 1 air quality areas. Class 1 areas require the most stringent air pollution controls.

As in many mountain communities, PM10 (particles with an aerodynamic diameter of 10 microns or less) is most likely the dominant pollutant in Kremmling, from windblown dust and wood burning stoves. This pollutant is probably lower than it was in the past, as natural gas use has increased and the local tepee burner has been removed. Prevailing winds are from the west-southwest, reducing the amount of dust or emissions that would reach Kremmling from the project area. Rocky Mountain National Park is approximately 30 air miles northeast of the project area.

Environmental Consequences: Current levels of use have not resulted in excessive generation of dust as a result of recreational use of public lands. Except for the "Current Use Alternative", the Proposed Action and alternatives all result in a reduction of routes available for motorized use. By reducing open routes, the improved vegetative cover will help minimize affects from dust and wind blown particles. Under the three alternatives, eventually 10-70 acres (39 acres under the Proposed Alternative) of routes would be revegetated and no longer be bare soil exposed to wind erosion. No specific air quality mitigations have been proposed and none have been considered necessary. If there are future limits needed to protect Rocky Mountain National Park, or other Class 1 areas, then restrictions would need to be implemented regardless of the alternative selected in this plan. It is more likely that these restrictions would apply to the amount of use or the types of allowable vehicles rather than the miles of open routes.

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Affected Environment: There are two Areas of Critical Environmental Concern (ACECs) within the public lands administered by the Kremmling Field Office. One of these areas, The Kremmling Ammonite Area is found within the project area. The other ACEC is located in North Park, approximately 50 miles north of the project area, and would not be affected by the project.

The Kremmling RMP designated the Kremmling Ammonite Area as an ACEC in 1984, to protect and enhance the research and scientific values that exist in this area. All of the ACEC lies within the project area. This area contains superb quality examples, numerous genera of ammonites, some quite large ("birdbath site") in life, with spawning and death assemblages

within the ACEC. Numerous studies, scientific papers and museum displays exist from this site. Road access to a parking lot with a signed and fenced vehicle exclosure exists at the west side of the ACEC. A road currently exists entering the ACEC at its southeast corner. The ACEC is signed closed to vehicles in this area, but access is not physically blocked or fenced. Although the public is welcome to park and walk through the site, considerable damage and pilfering of the resource has occurred from public access in the past. Collection and vehicle use is limited to permitted activities.

Environmental Consequences: Access by vehicle would likely cause physical disturbance and damage to the specimens in the Kremmling Ammonite ACEC. Although the area is officially closed to vehicles under current management prescription, and is signed and fenced at the main west entrance, vehicle access, with damage to the resource, and pilfering continues at the southeast side. Only under the Low Use Alternative and Proposed Action is all road access to the ACEC physically blocked by fence and gate, and vehicle access restricted to use by permit only. The Current and High Use Alternatives would continue the legally closed, but physically open status and damage would likely continue to this resource where physical access is not blocked or fenced.

CULTURAL RESOURCES

Affected Environment: A brief summary of the history of Middle Park and the project area is available at the KFO, but is not presented here. References included in Appendix 2 provide the reader with detailed accounts of both the prehistoric and modern historic occupation of Middle Park and the project area.

Old Highway 40, called the "Victory Highway", was constructed in the mid 1920s and is considered in its entirety to be eligible to the National Register of Historic Places, however most recorded segments of the Highway are non-contributing elements to NRHP eligibility. Segments of the highway are currently being used by OHVs, both directly and to access other areas within the project area. Use of the Victory Highway by motorized and non-motorized OHV users would seem to be a suitable use of this resource, but it is recommended that that the Victory Highway be occasionally monitored for undue degradation.

With the ever increasing use of ATVs and OHVs that do not require a road, and general recreational use impacts increasing at a rapid rate, all archaeological sites within the project area are at risk because there are no sites that are not within 1 mile of an access. There are very few sites that have not already been illegally looted and vandalized. Local and other collectors have been illegally collecting artifacts and digging features for the last one hundred years.

Environmental Consequences: For all alternatives the direct physical impacts from roads going through cultural sites and the indirect impacts to cultural resources from looting and vandalism are directly tied to human access to the project area. Information on predictive modeling for estimating the number and location of cultural sites is available at the KFO.

Studies conducted in the early 1980s have clearly demonstrated that vulnerability of cultural sites from looting and vandalism are statistically a direct result of access to the sites. That is, all cultural sites located within 1 mile of an access are vulnerable and likely to have been impacted

by human looting and vandalism. Cultural sites located in excess of 1 mile are dramatically and statistically, less vulnerable. The conclusion is that people are willing to walk up to 1 mile to illegally collect artifacts and vandalize sites through illegal excavations (Nickens, 1981).

Current Use Alternative: Motorized use would be limited to Existing Roads and Trails. Without a designation of the existing roads and trails, however, trails would continue to be developed without adequate protection of the cultural resources. Any identified resource damage and impacts would be curtailed by Emergency Road Closures as allowed under the Code of Federal Regulations. Closures would remain in effect until such time as the impacts are mitigated.

Low Use Alternative: Motorized use would be limited to Designated Roads and Trails and provide minimal opportunities for motorized recreation. Management emphasis would be on resource protection. Physical closures where ground disturbance would occur and reclamation of routes would require archaeological inventory and site monitoring to insure that cultural sites are not impacted by such closure and reclamation measures. Some non-motorized recreation would be encouraged and quiet zones established. Cultural sites in some instances would be better protected by the Low Use alternative, but could in turn place greater vulnerability on other, largely undisturbed, cultural sites, by shifting use patterns and causing some routes to be more heavily used.

High Use Alternative: Motorized use would increase, but still be limited to designated roads and trails. A high number of routes would be designated and afford a wide variety of motorized riding opportunities. Cultural sites would be more vulnerable to vandalism and theft by increased numbers of users in this alternative.

Proposed Action: Motorized use would be managed and limited to designated roads and trails. A "moderate" number of roads and trails would be available for both motorized and non-motorized users. Route density would be reduced from the existing condition, through numerous road closures and reclamation. Road closure and reclamation would require monitoring to avoid impacting cultural resources. This alternative attempts to provide a balance between public use and protection of cultural and other resources.

Winter motorized use would be limited to the County Roads, with seasonal closures to protect wildlife values. For all alternatives, snowmobile use would be limited to the County Roads and use is predicated on having a minimum of 6" of snow ground cover. There are minimal anticipated impacts to cultural resources from winter snowmobile use. With expansion of the winter use restriction to include all motorized vehicles, there would be a reduction of potential damage to cultural sites in the winter months during winters where there is little snow cover in the project area.

Mitigation: For winter use, staging areas for loading and unloading should also be restricted to the disturbed portion of the County Roads.

An intensive and aggressive survey, monitoring, patrol, testing, salvage and mitigation program would be implemented in conjunction with the Proposed Action and all alternatives, to obtain as much data as can be acquired before additional impacts occur.

Implementation of the Record of Decision for this project shall be subject to the "Programmatic Agreement" coordinated with the Colorado State Historic Preservation Office and the Southern Ute Tribe (see Appendix 4).

A table of known cultural sites that are in potential jeopardy from direct physical impacts of OHV use, and a suite of management and mitigation options is presented in Appendix 3. Treatment options are presented as a sliding scale with treatments ranging from signing and monitoring, to fencing and emergency road closure, to testing, salvage, and mitigation. Once on the ground monitoring is implemented and base line data established, treatment options will reflect the degree of past, current and anticipated impacts. Implementation of the project decision would require flexible, adaptive management to accommodate new information and changing environmental use impacts.

Monitoring and enforcement is essential to effectively minimize loss of the archaeological resources to impacts from human vandalism and collection of artifacts.

For mapping and signing efforts, particularly at information kiosks, the cultural program would develop appropriate information, education and legal penalties language to be included in all hand outs, maps and kiosks. This is important to not only educating the public, but to warn them of the consequences of their illegal behavior which can include fines, and confiscation of vehicles and personal property

ENVIRONMENTAL JUSTICE

Affected Environment: According to the most recent census bureau statistics, there are no minority or low income communities within or near the project area.

Environmental Consequences: There would be no direct, indirect, or cumulative effects to this element from either the Proposed Action or any of the alternatives.

FARMLANDS, PRIME AND UNIQUE

Affected Environment: There are no prime or unique farmlands within the Middle Park area. The area's hay meadows could be considered farmlands of state or local importance. Roads within the project area may provide access to these lands. In each alternative, the IDT was careful to maintain private access wherever possible.

Environmental Consequences: There would be no direct, indirect or cumulative impacts to farmlands from the Proposed Action or any of the alternatives.

FLOODPLAINS

Affected Environment: The Wolford Travel Management Project Area is primarily located in the upland areas north of the Colorado River floodplain and east of the Muddy Creek floodplain. The Muddy Creek floodplain is within the project boundaries. The Wolford Mountain Reservoir

has inundated 2.1 miles of Muddy Creek, and the upstream segment of the creek is on private lands. Below the reservoir, the project area's boundary excludes the private lands. The BLM manages parcels that have approximately one mile of Muddy Creek below the reservoir. The reservoir's operations control the frequency, size, and duration of flows.

Public roads and trails are located along the outer edges of the floodplain, and are mostly parallel to the creek. WS0124 is the longest route in the floodplain, with approximately 1.3 miles on public lands. This primitive 4-wheel drive road is recommended as an ATV route in the Proposed Action and the High Use Alternative. The Low Use Alternative designates this route for administrative use only. WS0077b crosses Muddy Creek on private land, as do the highway and County Road 25. ATV routes are used by the Colorado River Conservancy District to irrigate the wetland mitigation area.

Table FP-1 below summarizes routes within the Muddy Creek floodplain, within the Project Area's boundaries.

Table FP-1
Miles within the Muddy Creek Floodplain

	Existing Routes	Low Use Alternative	High Use Alternative	Proposed Alternative
Administrative	0.20 miles	1.38 miles	0.48 miles	0.63 miles
Private, County, Highway Routes	2.54 miles	2.54 miles	2.54 miles	2.54 miles
Open-Limited	1.24 miles	0.12 miles	0.66 miles	0.12 miles
ATV	0.54 miles		0.75 miles	1.31 miles
Motorcycle	0.74 miles		0.82 miles	0.04 miles
Non-Motorized		1.13 miles		0.57 miles
Closed		0.08 miles		0.05 miles

Environmental Consequences: The floodplain component of an environmental assessment is to determine if the Proposed Action increases the flood hazard of an area or impacts the floodplain's functionality (Executive Order 11988). Since only a small portion of the public land is located in a floodplain, and that floodplain is reservoir controlled, the various alternatives do not impact the functionality of the floodplain or affect flood hazards. Having the roads on the edges of the floodplain also minimizes floodplain impacts. The alternatives all reduce the miles of open road, and the Proposed Alternative limits vehicles to ATV or smaller. Possible water quality, wetland, and soil impacts are discussed in other sections of this document.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Currently, invasive, non-native species (weeds) are not a serious problem and can be found only in small, scattered locations within the project area. Weeds within the project area are mainly found in and around areas of disturbance, such as roads, livestock watering and salting areas, and areas disturbed by motorized vehicles and the general public. Houndstongue (*Cynoglossum officinale*), cheatgrass (*Bromus tectorum*), sticktight

(*Lappula occidentalis*), and Canada thistle (*Cirsium arvense*), are among the many weedy species that can invade areas that are disturbed or have a change in management practices. The risk of noxious weed invasion increases with greater numbers of roads and trails and larger numbers of users.

Overall, the noxious weed problem is presently minor, and, with proper monitoring and implementation of an integrated weed management program, the occurrence of weeds can be minimized. Weeds can never be totally eradicated nor are there vegetation communities that are totally immune to weed invasion, so a comprehensive and on-going weed control program must be a part of the final Wolford Mountain Travel Management Plan. Although the BLM administers almost all of the land within the project area, the State of Colorado and private landowners control small portions of land. All parties are subject to a county wide weed control program and are responsible for weed control within their own jurisdiction. Currently, the BLM is in partnership with the Grand County Department of Natural Resources for weed control on BLM administered land in the project area. Grand County has the better capability to monitor, map, and control the noxious weeds growing within the project area. However, the Kremmling Field Office has the ultimate responsibility for weed control on BLM administered lands.

Tamarisk (*Tamarix ramosissima*) has recently been found in scattered patches along the shores of Wolford Reservoir. The Colorado River Water Conservation District, in cooperation with the BLM, has implemented an aggressive program to eradicate this highly undesirable species. The plan calls for herbicide application, monitoring, and follow up herbicide application to ensure the shores and adjacent areas around Wolford Reservoir are kept tamarisk free.

Environmental Consequences: To prevent the spread of weeds and keep the project area relatively weed-free, a monitoring and weed control program would need to be established in conjunction with the Proposed Action or any of the alternatives to locate, map, and control weed infestations. Weed seeds unwittingly carried by people, animals, motor vehicles, and construction equipment are a major avenue for weed dispersal. Of special concern in the project area are weed seeds carried by vehicles, and in hay for feeding horses. As the use of public land increases, the chance for weed establishment and spread increases.

<u>Consequences Common to the Proposed Action, Low Use, and High Use Alternatives:</u>
Implementation would require a comprehensive monitoring and treatment program to locate, map, and control weeds. The Proposed Action and the action alternatives would impact the chance of weeds becoming established in the project area. The chance of weed establishment would consist of 2 phases. The first phase would be as the roads to be closed are abandoned and/or reclaimed. The roads to be closed would be either disturbed by reclamation work or abandoned and allowed to revegetate naturally. Weeds would have their greatest opportunity for establishment during this period. A strong monitoring and weed control program would need to be implemented during this stage. The weeds should be controlled during the early stages of establishment because the chance for eradication is much higher at this time. Once established, weeds become much more difficult to control and require significantly more money, time, and effort to control. As the roads reseed, and native vegetation becomes established and then dominates a site, the chance of weed invasion severely lessens. During the second phase (once the native vegetation has become dominant), the chance of weed invasion is at its lowest. However, the chance for weeds to become established still exists, so monitoring must be continued and eradication techniques applied to any weeds that attempt to invade.

The high density route areas that have been set aside for use by OHVs and motorcycles are mostly poor range sites with steep slopes where vegetation, including weeds, is sparse. Continued high density use and increased disturbance in these areas would create sites that are conducive to weed invasion and spread. The main concern from weeds in the high density use areas is weed seeds being picked up by motorized vehicles, especially in muddy areas, and distributed elsewhere in the project area.

To properly execute the Kremmling Field Office Weed Management Program, off road access into closed areas may be required to survey for, map, and control weeds. This may require using OHVs or other motorized vehicles to access areas that have been closed. BLM approval would be required prior to entering a closed area with a motor vehicle for weed control purposes. The BLM would grant or deny access on a case-by-case basis.

Winter closure of the project area to motorized vehicles, except on authorized snowmobile routes, would have a small positive impact on efforts to control invasive, non-native species. Winter closure of the roads in the project area would lessen the chance of seed deposition during the winter. During fall and winter, weed seeds are ripe and ready for dispersal. A carrier such as a person, animal or vehicle may unknowingly pick up weed seeds and deposit them in an area that is weed free. The area of deposition may be within the project area or the seeds may be carried to a new area a long way from the source location.

Current Use Alternative: This alternative would delay the decision to implement the Wolford Travel Management Plan until the RMP is amended or revised. In the mean time, the continued use of the existing routes in the Wolford Mountain area would provide fewer safeguards for preventing the proliferation of roads and trails. If route proliferation were to occur, disturbed areas would increase in number and size and the risk of weed infestation would increase proportionately. Once weeds become established, it is easy for them to spread and become more difficult to control. The Current Use Alternative would not implement a weed management program that is specific to the project area. The project area would continue to be a part of the overall weed control program for the Kremmling Field Office.

Low Use Alternative: This alternative would close the most roads and is most restrictive to travel; however reclamation of closed roads would create new disturbances and, therefore, a higher chance of weed invasion or spread. Over time, as the roads are reclaimed and native vegetation established, the area of disturbance would decrease. Accordingly, the potential for weed establishment would also diminish.

High Use Alternative: The high use alternative, of all of the alternatives, would have the most roads open to motorized vehicles. This alternative would close the fewest existing roads and have the least chance of weed invasion and spread during the reclamation period. Once the reclamation period is over and the abandoned and closed roads have revegetated, this alternative has the greatest chance of weed invasion or spread over the long term because it leaves the highest number of roads open to motorized vehicles. Also, the chance of weed seed dispersal to other parts of the project area would be highest with this alternative. However, the amount of disturbance with this alternative compared to the overall size of the project area is minor. The result is a slightly higher chance of weed invasion and spread with the high use alternative when compared to the other alternatives.

Proposed Action: The roads scheduled to remain open and those designated for closure in the Proposed Action would provide an avenue for weed establishment and spread. However, as closed roads become reclaimed with native vegetation, the chance of weed invasion or spread would diminish. A strong monitoring and control program would need to be included with the Proposed Action to identify weed infestations and to control the weeds once located.

Mitigation: The project area would be included in the Kremmling Field Office Weed Management Program. During reclamation periods when closed and reclaimed roads would be more susceptible to weed invasion and spread, the BLM will, in coordination with the Grand County Department of Natural Resources, locate, map, and control weeds.

All project implementation must include a requirement for inspections and use of weed free construction and maintenance equipment, especially the tires and undersides.

Public education and signs at entry areas must be provided to promote using clean recreational vehicles on public land and recreation user responsibility in preventing the spread of weeds.

MIGRATORY BIRDS

Affected Environment: The Project area provides habitat for a variety of migratory birds including songbirds, water birds, and birds of prey. The majority of the habitat in the plan area is dominated by sagebrush steppe. Aspen and conifer, primarily Douglas fir and lodgepole pine forest types occur on Wolford Mountain and Little Wolford Mountain. Cliff and rocky outcrop habitat is also present on Wolford Mountain and to the north in an area adjoining Antelope Creek. Riparian and wetland habitat occurs in the project area along Muddy Creek, Antelope Creek, Cow Gulch and Hay Gulch. A more detailed description of the various vegetative types that comprise the project area is located in the VEGETATION section of this report. Wolford Mountain Reservoir and Mitchell Reservoir, both located within the project area, provide open water habitat for a variety of waterfowl and shorebirds.

Some of the more important migratory bird species inhabiting the travel plan area include several which have been determined by the U.S. Fish and Wildlife Service (FWS) to be Birds of Conservation Concern. The FWS was mandated in 1988 to "identify species, subspecies, and populations of all migratory non game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act of 1973." Species considered Birds of Conservation Concern by FWS which have been documented breeding or likely to breed in the travel plan area include golden eagle, Northern harrier, prairie falcon, and Wilson's phalarope. In addition to these species, Northern goshawks, a BLM designated Sensitive Species, may inhabit the forest habitats occurring on Wolford Mountain and Little Wolford Mountain, both in the project area. Although this species has not been documented as breeding in the project area, suitable nesting and foraging habitat does exist in the Douglas fir and aspen forest stands within the project area.

More than thirty species of migratory birds have been documented in the sagebrush steppe vegetative type in Middle Park by the Colorado Bird Observatory (CBO). Some of the monitoring efforts that provided these results were conducted in sagebrush habitat located in the

project area. In addition to bird counts, nests of eight species of sagebrush dependent songbirds were located and monitored during this effort. The four most common nesting species located during this effort were sage thrasher, green-tailed towhee, Brewer's sparrow, and vesper sparrow.

Bird surveys conducted in wetland/riparian habitat and open water associated with Muddy Creek and Wolford Mountain Reservoir have indicated that more than sixty species of raptors, songbirds, and waterbirds use these important habitat types. These surveys were conducted during spring and summer so most of these species probably breed in the project area. A list of these species is on file in the Kremmling Field Office.

Due to the harsh climate of the project area most migratory bird use is limited to summer. Birds arrive in the area during late spring and migrate from the area in early fall depending on weather conditions. As mentioned above, the species which are present in the plan area during summer are likely breeding and rearing young, and then leave as weather changes in late summer. Therefore, winter travel alternatives and their effects on migratory birds will not be addressed any further.

Environmental Consequences: In order to adequately address impacts of the proposed Travel Management Plan on migratory birds, several assumptions are necessary. The first assumption is that motorized and non motorized travel on the variety of roads and trails that currently exist in the project area are impacting migratory birds, Greater sage-grouse, and other terrestrial wildlife species although insufficient data are available to determine the extent of these impacts. No current motorized use data on existing roads and trails are available for the project area. Such use data would be helpful when determining actual travel impacts to migratory bird species as well as other wildlife species that inhabit the project area. Travel impacts to migratory birds are also related to topography since topographic features can affect both noise and visual impacts from motorized and non-motorized visitors to the area.

The second assumption is that loss of habitat can be quantified by converting miles of roads and trails to acres of habitat by multiplying miles times an accepted width of lost vegetation resulting from travel on the various roads and trails. Acreage figures are used in this analysis to compare actual loss of vegetation attributed to road and trail use. This vegetation provides food and cover for migratory birds within the project area.

The third assumption is that routes which are designated for "administrative use only" in the Proposed Action and each of the action alternatives would be treated as closed since travel on these routes would only occur on an occasional basis rather than routinely during the period of time when migratory birds are using the plan area. Also, the miles and acres of routes designated as county, private, or state would remain unchanged in the alternatives.

Winter travel for each alternative and their impacts on migratory birds will not be addressed since migratory birds are not present in the Project area during winter. However, the closure of routes during winter, the expansion of the winter closure geographically and to include all motorized should help to reduce the direct degradation of habitat as well as the amount of eroded soil which could impact sensitive habitat elsewhere. The net effect of the changes to winter closures should have a positive impact on the habitat of bird species even though that habitat is only occupied during non-winter months.

The Current Use Alternative: This alternative would result in a total of 230.5 miles of existing roads and trails remaining open to motorized vehicle travel. Table 3 indicates that 4.2 miles would be closed and reclaimed with implementation of this Alternative. Nesting habitat for migratory birds along the 236.2 miles of routes would continue to be unused to some degree due to disturbances caused by motorized noise and non-motorized human presence impacts. In addition to disturbance, actual loss of vegetation used for foraging and nesting cover for migratory birds has resulted from route proliferation in the proposed plan area. The 236.2 miles of routes has eliminated approximately 133.2 acres of vegetation which would be used by migratory birds if it were available. This Alternative would not designate travel routes and would allow off road travel to continue. New routes would continue to add to the loss of vegetation used by migratory birds for nesting and feeding habitat and would add to the potential for disturbance of breeding activities by both motorized and non-motorized travel.

Low Use Alternative: As displayed in Table 3, this Alternative would be the most restrictive to motorized travel of the four alternatives considered. Total miles of routes designated for travel would be reduced to 38.4, which would reduce the opportunities for disruption of breeding and foraging activities for migratory birds in the project by motorized and non motorized travel. This mileage would directly eliminate approximately 23.7 acres of vegetation in the travel management plan area which would not be available for migratory birds. Conversely, when the roads and trails designated for closure are reclaimed and re-vegetated with native vegetative, 117.7 acres of nesting and feeding cover would be added to the project area. This additional acreage would add nesting and feeding cover for migratory birds and would result in an increase in the productivity of the species nesting in the travel plan area. This alternative would be the most beneficial for migratory birds.

High Use Alternative: This alternative would impact more migratory bird habitat than the Low Use Alternative but not as much as the Current Use Alternative. As is displayed in Table 3, this alternative would allow vehicle travel on 196.3 miles of roads and trails within the project area. The roads and trail which would be designated for motorized travel would result in the loss of about 115.8 acres of vegetation which would not be available for nesting and feeding cover for migratory birds. The high number of miles designated for motorized travel would disrupt more migratory bird use of the project area since more habitat would be accessible to vehicle travel.

The Proposed Action: This action would provide for a reasonable balance between migratory bird habitat protection and motorized and non motorized travel in the project area. Implementation of this alternative would facilitate travel on 138.0 miles of roads and trails within the project area. The roads and trails designated for vehicle travel would result in the continued loss of about 78.9 acres of vegetation, which, if available, could be used by migratory birds for breeding and feeding habitat. Approximately 58.9 acres of existing roads and trails would be closed to travel and reclaimed to conditions similar to adjoining habitat. This would add 58.9 acres of migratory bird habitat once vegetation is established in the reclaimed areas. In addition to the reclaimed habitat available, the reduction in the number of miles of routes designated for travel (compared to the Current Use Alternative), would reduce the area of direct disturbance to migratory birds caused by both motorized and non-motorized travel. Direct disturbance to migratory birds due to noise and human actions associated with travel could result in avoidance of suitable habitat or disruption of breeding activities. Closing and reclaiming roads and trails would improve habitat conditions for migratory birds in the project area. Habitat

improvement and reduced potential for disruption of breeding activities could result in an increase in migratory bird productivity.

Mitigation: Sagebrush should be included in all seed mixes used to reclaim routes designated for closure.

New trail construction areas such as re-routes should be inventoried for migratory bird use prior to construction. Nesting habitat for key migratory bird species should be avoided.

Contract with the Colorado Bird Observatory to continue monitoring migratory species of concern that depend on the sagebrush ecosystem.

NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: To determine if there were any Native American religious concerns in the project area, the Ute Mountain, Southern and Northern Ute Tribes, the Northern Arapaho and the Shoshone Tribes were sent maps and information regarding planning efforts for the project on May 14, 2004, with a requested thirty day response period. A request was made for any information they wished to provide that would help in the planning effort, or that BLM should take into consideration during project planning and implementation. The Southern Utes were the only respondent who indicated they were aware that many cultural sites have been recorded within the project area, but offered no additional information.

Environmental Consequences: A Programmatic Agreement and request to participate was forwarded to the Colorado Office of Archaeology and Historic Preservation Office; the Advisory Council on Historic Preservation; the Northern, Southern and Ute Mountain Ute Tribes; the Northern Arapaho and the Shoshone. The Advisory Council has determined that their participation is not required to resolve adverse effects to cultural resources. The Northern Ute Tribe was the only Native American respondent who requested that they be included as a concurring party.

This document describes the process BLM will follow when new cultural and Native American burials, religious sites or traditional use areas are discovered. The agreement will be used to guide the cultural program through implementation of the project. The Final Programmatic Agreement is included as Appendix 4.

THREATENED AND ENDANGERED SPECIES (includes a finding on Standard 4)

Affected Environment: A list of threatened, endangered, and candidate species which could be impacted by the proposed travel management plan was received from the U.S. Fish and Wildlife Service (USFWS) on October 21, 2004. This list of species is presented in Table TES-1 below. A Biological Assessment (BA) was prepared to analyze the effects of the proposed travel management plan on the species which could be impacted and was submitted to the USFWS for review. The BA determined that the proposed project may impact one species from the list, Osterhout milkvetch (*Astragalus osterhoutii*), a federally listed endangered plant species. The BA determined that the proposed travel management plan "may affect but is not likely to

adversely affect" Osterhout milkvetch. A copy of the Biological Assessment is on file in the Kremmling Field Office.

Table TES-1. List of Species Included in this Analysis

Common Name	Scientific Name	Federal Status
Bald eagle	*Haliaeetus leucocephalus*	Threatened
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate
Canada lynx	*Lynx Canadensis*	Threatened
Bonytail	*Gilia elegans*	Endangered
Colorado Pikeminnow	*Ptychocheilus lucius*	Endangered
Humpback Chub	*Gilia cypha*	Endangered
Razorback sucker	*Xyrauchen texanus*	Endangered
Boreal toad	*Bufo boreas boreas*	Candidate
Penland beardtongue	*Penstemon penlandii*	Endangered
Osterhout milkvetch	*Astragalus osterhoutii*	Endangered

Of the ten species which could be affected by the proposed travel management plan shown in Table TES-1 above, nine were dropped from further consideration because their range distributions are outside the project area, or habitat necessary for their life requirements does not exist in the project area. These species are briefly discussed in the following analysis.

Bald eagle: Bald eagles migrate through Grand County during fall and spring and are normally observed along the river corridors which adjoin the project area. Bald eagles migrate from Middle Park in early winter, as soon as the lakes and rivers begin to freeze. Bald eagles have not been documented in the project area since it does not provide suitable habitat for them. Bald eagles are not addressed in this assessment.

Yellow-billed cuckoo: Bird surveys conducted within the past 10 years along sections of Muddy Creek have not identified this species in the project area. Suitable habitat for yellow-billed cuckoos, large galleries of cottonwood trees adjoining riverine systems, does not exist in the proposed project area.

Canada Lynx: Canada lynx have not been documented in the project area since it does not provide suitable habitat for them. Canada lynx are not addressed in this assessment.

Bonytail, Colorado Pikeminnow, Humpback Chub, and Razorback sucker: These species do not inhabit Grand County, however, the U.S. Fish and Wildlife Service has determined that water depletions in the Upper Colorado River and San Juan River basins, whose headwaters are in Grand County, may affect them. Since the project does not involve water depletion from these basins, these species will not be addressed in this assessment.

Boreal toad: Boreal toads range from approximately 7,500 to over 12,000 feet in elevation. In Colorado, this species generally occupies springs, streams, ponds, bogs, wet meadows and lakes in foothill woodlands, mountain meadows and moist subalpine forests. The project area does fall in the elevation range for boreal toads; however field surveys conducted by the Colorado Division of Wildlife did not locate boreal toad populations in the project area. No ponds, bogs,

or wet meadows which are necessary for boreal toad habitat, exist in the area or would be affected by the project. Therefore, boreal toad was dropped from further consideration.

Penland beardtongue: Penland beardtongue plants have not been recorded in the Travel Management Plan area, however, several populations of this species are located about four miles east of the project area. Penland beardtongue inhabits geologic formations identical to those supporting Osterhout milkvetch populations. These plants have been documented growing on the same sites in the area located east of the project area. Since Penland beardtongue has not been recorded in the project area, this species will not be addressed in this assessment.

Environmental Consequences: T&E and Sensitive species impacts pertaining to project alternatives were analyzed according to the BLM Kremmling RMP, the Standards for Public Land Health in Colorado, and BLM recreation guidelines as they relate to the maintenance of healthy plant and animals communities. The Standards describe natural resource conditions that are needed to sustain public land health and underscore decision-making and evaluation of all multiple uses of the public lands, including recreational travel. The Standards pertinent to impact assessment of Wolford Mountain TMP alternatives on wildlife include those related to riparian systems, plant and animal communities; and sensitive, threatened, and endangered species. Standard 4 provides direction for the Kremmling Field Office to manage T&E and sensitive species and maintain and enhance populations on both a local and landscape level, and reads:

"Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities. Indicators: All the indicators associated with the plant and animal communities standard apply. There are stable and increasing populations of endemic and protected species in suitable habitat. Suitable habitat is available for recovery of endemic and protected species."

Current Use Alternative: This alternative would delay the decision to manage motorized and non-motorized recreation use on the Wolford Mountain area and does not address the increased use on the project area's routes. Most existing routes would remain open and the enforcement of limiting motorized travel to existing routes in order to minimize cross-country travel would be difficult. (see Table 3). BLM has made the assumption that traffic levels on roads and trails on Public Lands would increase as more people recreate on Public Lands. Under this alternative, use would increase; conflicts would increase, and damage to Public Land resources would increase.

Implementation of the Current Use Alternative could have an adverse effect on Osterhout milkvetch in the future from increased and uncontrolled use of roads and trails. Existing populations would be protected by closing nearby routes. However, impacts to these plants could increase as small user-created routes are developed where the plants occur.

Low Use Alternative**:** This alternative provides for a relatively low level of access and travel opportunities and emphasizes the protection of ecosystems to restore, maintain and improve Public Land health. Table 3 indicates the relatively few miles or routes open to motorized travel and the high number of routes designated for closure and reclamation resulting in improved conditions of public lands in the project area. Improved Public Land health translates to improvements in habitat conditions for a variety of plant populations including Osterhout

milkvetch. This alternative would have the greatest benefit for populations of Osterhout milkvetch because more routes are designated closed and fewer designated open to travel in the project area.

Impacts to Osterhout milkvetch are the same as in the Proposed Action. All roads would be closed near active populations, cross country travel would be eliminated, and all motorized travel would be limited to designated routes.

High Use Alternative**:** This alternative would provide a high level of motorized access and related recreational use in the travel management plan area. This alternative allows for increased recreational travel with an emphasis on recreational benefits, opportunities, and access by providing high levels of OHV travel for the public. It results in higher environmental impacts to Public Land health as measured by the cumulative travel-related impacts to soils and plant and animal communities.

As indicated in Table 3, more roads and trails would be designated open for motorized travel and fewer miles would be closed and reclaimed. Impacts to Osterhout milkvetch could occur if a high level of motorized travel resulted in related recreation impacts in Osterhout habitat areas. However, this alternative would have some positive impacts for Osterhout milkvetch since all roads would be closed near active populations, cross country travel would be eliminated, and motorized travel would be limited to designated routes.

Proposed Action: The Proposed Action reduces road and trail densities to prevent disturbances to plant and animal communities and maintains viable interior habitat while managing increasing human traffic flow onto designated travel routes. Table 3 of this report lists the miles of route by designated use in the Proposed Action alternative.

As determined in the Biological Assessment prepared for the project, Osterhout milkvetch (*Astragalus osterhoutii*) is the only species affected to some degree by this alternative. Since all historic and active populations of Osterhout milkvetch would be protected from motorized vehicle use and avoided during road closure and reclamation efforts, the Proposed Action, as well as the action alternatives, would not result in direct mortality of individual plants.

With the elimination of any vehicle travel off designated routes and the closure of 68.6 miles of roads and trails, populations of *Astragalus osterhoutii* would be protected from motorized travel. Undiscovered populations would less likely be destroyed since unregulated travel would cease. Decreased motorized travel in the area would reduce soil compaction in potentially suitable habitat where populations may expand. Roads and trails that are closed may provide additional habitat and allow Osterhout milkvetch populations to expand since plants occur frequently on roadsides and road cuts.

Research also suggests that some of the Osterhout pollinators live in rodent holes, and that pollinator numbers decrease where rodent holes are destroyed from surface disturbance. By closing roads and trails and eliminating cross country travel, there is an opportunity for rodent holes and pollinators to increase thereby allowing successful reproduction and maintenance of genetic diversity.

Overall, the implementation of the Proposed Action would have a beneficial effect on Osterhout milkvetch. Currently, most roads near historic and existing populations are closed and existing roads near active populations would remain closed in all alternatives. This action would also limit travel to designated routes throughout the project area and would prevent future unauthorized travel on routes that have not been designated.

SENSITIVE SPECIES

Affected Environment: Seven animal species and one plant species designated as Sensitive Species by BLM have been documented within the Kremmling Field Office area of jurisdiction. These species include Northern goshawk, Barrow's goldeneye, Ferruginous hawk, Greater sage-grouse, Black tern, White-faced ibis, Northern leopard frog, and Harrington beardtongue. Of these species, Greater sage-grouse and Northern leopard frogs inhabit the proposed travel management plan project area. Northern leopard frogs are addressed in the Aquatic Wildlife section of this report. Northern goshawks are likely residents of the forest habitat that occurs in the plan area; however, no breeding birds have been documented. None of the remaining species are known to inhabit the project area.

The project area provides habitat for Greater sage-grouse, a BLM designated Sensitive Species. Although sensitive species are not protected by federal law, it is BLM policy that no action should be taken that would contribute to these species becoming federally listed species through actions funded, authorized, or implemented by the BLM. Greater sage-grouse inhabit nearly the entire project area either during the breeding season or during winter. Only the higher elevation forested areas associated with Wolford Mountain and Little Wolford Mountain are not considered sage-grouse habitat. All sagebrush/grassland vegetative types within the travel management plan area are considered sage-grouse habitat.

Sagebrush dominated habitat that supports sage-grouse during the breeding season and winter season are considered crucial to the long term viability of this species. Breeding habitat includes display areas referred to as strutting grounds or leks, nesting habitat and brood rearing habitat. Winter habitat is characterized by south-southwest facing slopes with areas of tall sagebrush plants nearby. The slopes remain relatively snow free and the adjoining tall sagebrush stands provide both food and cover during these winter periods. The Colorado Division of Wildlife has identified three high winter concentration areas and six wintering areas used by sage-grouse during winter within the project area.

Leks are usually located on relatively flat ridges with sparse shrub cover but with dense stands of sagebrush adjoining the leks. Nesting and brood rearing cover is composed of dense stands of mid height sagebrush with a mix of grass and forb species established in the understory. According to the Colorado Division of Wildlife, numerous lek sites occurred in the project area over the past 40 years. As many as 17 leks were active at one time or another in the project area during the past 40 years. During the 2004 sage-grouse breeding season, four active leks were documented within or adjoining the project area. The two largest leks in Grand County, each of which supported between 30 and 35 male sage-grouse during the 2004 breeding season, are located within the project area.

In addition to the leks, recent research efforts by the Colorado Division of Wildlife have documented female sage-grouse nesting and brood rearing in suitable habitat within the project area. This same research determined that most brood rearing occurs in adjoining wet areas, primarily irrigated hay meadows east of the project area.

Loss of sagebrush habitat to home site development in areas adjoining the project has likely impacted the sage-grouse population in west Grand County. As mentioned above, the numbers of active leks has declined as has suitable habitat on private land.

The recent decline in Greater sage-grouse populations throughout the western U.S. has elevated sage-grouse and sagebrush habitat management to high priority in all states where they occur. In Colorado, efforts to reverse the decline in sage-grouse numbers began in the late 1990s with the development of sage-grouse conservation plans by geographic area throughout the state. A plan for the conservation of Middle Park sage-grouse was completed in 2001 and is on file in the Kremmling Field Office. The sage-grouse plan defines long term population goals for sage-grouse in Grand County and outlines a strategy to protect and improve sage-grouse habitat in the county. The plan emphasizes the importance of the Greater sage-grouse population and the sagebrush habitat north of Kremmling to the long term viability of the entire Middle Park sage-grouse population. During the conservation planning process, analysis of the current sage-grouse population status in the Muddy Creek drainage area indicated that this population is stable at present. This important sage-grouse habitat area includes BLM land addressed in the project area.

Environmental Consequences: All BLM managed land included in the proposed travel management plan area is considered breeding habitat for Greater sage-grouse, although the area encompassing Wolford Mountain and Little Wolford Mountain is seldom used. All but the extreme northern section of the project area is considered winter habitat for sage-grouse. Maps showing sage-grouse distributions within the project area are available in the Kremmling Field Office.

Current Use Alternative: Any further travel management would be postponed until the Kremmling RMP would be updated. Little additional resource protection measures such as physical road and trail closures would be initiated. Emergency closures would be the only technique which could be used to protect important sage-grouse habitat features such as leks. New roads and trails could continue to be created in this alternative since no official travel management plan with designated routes identified would be in place. Sage-grouse habitat would be further impacted by the creation of any new roads and trails which would eliminate more sagebrush habitat. Table SG-1 below illustrates the miles and corresponding acres of routes in Greater sage-grouse breeding and winter habitat which would result from implementation of the Current Use Alternative:

Table SG-1
Miles and Acres of Routes in Greater Sage-Grouse Breeding and Winter Habitats

Habitat Type	Open	Closed/Reclaimed or Open to Admin Use
Breeding	232.0 mi/130.6 ac	4.2 mi/2.6 ac
Winter	232.0 mi/130.6 ac	4.2 mi/2.6 ac

In this alternative, 232.0 miles of roads and trails would remain open to travel in sage-grouse habitat. This number of miles equates to the continued unavailability of 130.6 acres of sagebrush/grass-forb vegetation which would not be available for sage-grouse use for nesting or brood rearing. In addition, no administrative travel-only restrictions or seasonal road closures to protect sage-grouse on leks would be implemented. Only 4.2 miles of routes, (2.6 acres) in sage-grouse breeding habitat would be closed and reclaimed.

As mentioned above, nearly all the proposed travel management plan area except the extreme northwest section and the part west of U.S. 40 is sage-grouse winter habitat. The Current Use Alternative would not provide for any significant protection of additional winter habitat since only 4.2 miles (2.6 acres) of roads and trails would be closed and reclaimed. No seasonal closures would be used to protect sage-grouse nor would administrative-only restrictions be placed on routes existing in important sage-grouse habitat. The existing winter snowmobile travel limitation would remain in effect in this alternative. This closure is described earlier in this report and would apply only to snowmobiles and not all motorized vehicles. Map 4 displays the existing snowmobile limitation area and routes open to travel. Normal motorized travel could occur in the plan area with no closure in effect if snow conditions allowed. Continued lack of restrictions on vehicle travel during winter could result in displacement of sage-grouse from areas open to travel during winter.

Since virtually all existing roads and trails would remain open, the direct travel-related impacts to sage-grouse would continue in both summer and winter. Severity of winter impacts would depend on area snow conditions, with 6" or more snow depth triggering the existing snowmobile closure, or less than 6" allowing all non-snowmobile vehicles to travel unrestricted on existing routes throughout the project area.

Low Use Alternative: This alternative would be the most restrictive to motorized travel of the four proposals considered in this analysis, and would be the most beneficial to sage-grouse as well as all other species dependent on the sagebrush ecosystem. Table SG-2 below illustrates the miles and corresponding acres of routes in Greater sage-grouse breeding and winter habitat which would result from implementation of the Low Use Alternative:

Table SG-2
Miles and Acres of Routes in Greater Sage-Grouse Breeding and Winter Habitats

Habitat Type	Open	Closed/Reclaimed or Open to Admin Use
Breeding	41.9 mi/23.7 ac	194.2 mi/117.8 ac
Winter	23.1 mi/13.6 ac	107.9 mi/65.4 ac

As indicated in Table SG-2, only 41.9 miles (23.7 acres) of roads and trails would remain open to travel including non motorized travel. A total of 119.2 miles of roads and trails would be closed and reclaimed and an additional 75.0 miles of roads and trails would be open to administrative uses only. Closing and reclaiming roads and trails would add 72.3 acres of sagebrush habitat, and administrative use restrictions would add another 45.5 acres of habitat. Once vegetation is established in these areas, more cover and forage would become available for sage-grouse inhabiting the project area.

In this alternative, 23.1 miles of roads and trails in the portion of the project area designated as sage-grouse winter habitat would remain open to travel. Roads and trails designated for closure and reclamation would total 71.1 miles and administrative use-only travel would be applied to 36.8 miles. The closure of 71.1 miles of roads and trails would add 43.1 acres of sagebrush dominated vegetation to the winter areas and administrative use-only restriction would over time, add another 22.3 acres of vegetation.

Direct physical disturbance impacts to Greater sage-grouse caused by motorized and non motorized travel would be greatly reduced in this alternative due to the reduction in miles of roads and trails open. This reduction would apply to both summer and winter travel in sage-grouse habitat within the proposed travel management plan area. The winter seasonal closure area would be expanded to the entire project area and a minimal number of routes would be open for snowmobile use. The winter travel restriction would be expanded to include all motorized vehicle travel between December 15 and the following April 15. Map 6 shows the open routes. This closure would reduce vehicle impacts to sage-grouse when the grouse are on their winter ranges since only snowmobile travel would be permitted on a limited number or routes.

High Use Alternative: This alternative would provide for a high level of motorized travel in Greater sage-grouse habitat within the project area. Table SG-3 below illustrates the miles and corresponding acres of routes in Greater sage-grouse breeding and winter habitat which would result from implementation of the High Use Alternative:

Table SG-3
Miles and Acres of Routes in Greater Sage-Grouse Breeding and Winter Habitats

Habitat Type	Open	Closed/Reclaimed or Open to Admin Use
Breeding	196.8 mi/115.8 ac	39.4 mi/23.9 ac
Winter	110.9 mi/65.3 ac	20.1 mi/12.1 ac

Implementation of this alternative would designate travel on 196.8 miles of roads and trails in sage-grouse habitat. The 196.8 miles would equate to 115.8 acres of the sagebrush vegetative type which would not be available as food and cover for sage-grouse. In this alternative, 20.8 miles (12.6 acres) of roads and trails would be closed and reclaimed and 18.6 miles (11.3 acres) would be designated for administrative use-only. These acreages would do little to increase the quantity of existing sagebrush habitat available to sage-grouse in the travel management plan area. No seasonal travel closures to protect sage-grouse during the strutting season would be designated. Both motorized and non motorized travel could disrupt breeding activities if sage-grouse are disturbed during the breeding season while on leks or during nesting and brood rearing.

In the High Use Alternative, 110.9 miles of roads and trails would remain open to travel in sage-grouse winter areas. The 110.9 miles would result in 65.3 acres of vegetation lost to roads and trails and not available for sage-grouse food and cover during winter. Also, 8.2 miles (4.9 acres) of roads and trails would be designated for administrative use-only and would eventually re-vegetate to the extent these acres would be suitable for sage-grouse use during winter. Approximately 11.9 miles of roads and trails in sage-grouse winter areas would be closed and reclaimed in this alternative. This would add about 7.2 acres of vegetation to the existing sage-grouse winter areas upon successful revegetation.

The high number of open road and trail miles in the project area in this alternative would directly contribute to disruption of sage-grouse activities by both motorized and non motorized users. Such disruption would in turn impact the long term health of sage-grouse populations in the project area.

Some routes north of County Road 25 would be closed to winter travel. These routes would be in addition to the Winter Snowmobile Limitation Area and would provide additional protection for sage-grouse from winter vehicle travel harassment. The existing snowmobile travel restriction would be expanded to include all motorized travel in this alternative. This addition would provide additional protection for wintering sage-grouse since vehicles other than snowmobiles would be included and no cross country travel would be allowed. Map 8 shows the winter travel limitation restrictions included in this alternative.

Proposed Action: The Proposed Action provides for the protection of sage-grouse habitat while providing a reasonable amount of motorized and non motorized travel opportunities in the project area. Table SG-4 below illustrates the miles and corresponding acres of routes in Greater sage-grouse breeding and winter habitat which would result from implementation of the Proposed Action:

Table SG-4
Miles and Acres of Routes in Greater Sage-Grouse Breeding and Winter Habitats

Habitat Type	Open	Closed/Reclaimed or Open to Admin Use
Breeding	139.0 mi/79.0 ac	98.0 mi/59.0 ac
Winter	76.7 mi/43.5 ac	55.0 mi/33.1 ac

Of this total mileage open, 2.6 miles of existing motorized travel on three different routes would be closed to all travel during the sage-grouse strutting season. These routes lie close enough to active strutting grounds that either motorized or non motorized travel during the strutting season could impact breeding activities on these strutting grounds. In this alternative, 69 miles of existing travel routes would be closed to all travel and reclaimed and 29 miles of route would be designated for administrative use only, closing these routes to nearly all travel while helping these roads to re-vegetate over time. The closed and reclaimed, and administrative closures would add about 59 acres of habitat to the project area sage-grouse habitat upon successful reclamation, making it available for use as nesting or brood rearing cover during the breeding season. The 138 miles of open routes equates to a continued loss of about 79 acres of sagebrush habitat due to route impacts on vegetation.

Nearly all the project area except the extreme northwest section and the portion west of U.S. 40 is identified as sage-grouse winter habitat. Winter habitat is extremely important to sage-grouse survival especially in areas such as Middle Park where extreme winter conditions can occur. The Proposed Action would designate travel on 77 miles of routes which lie in sagebrush dominated areas identified as sage-grouse winter habitat. These routes equate to about 44 acres of vegetation lost in the sage-grouse winter areas. Conversely, 55 miles of existing roads and trails would be closed and reclaimed, or be designated for administrative use only. The closure and reclamation of these routes would add about 33 acres of sagebrush habitat to sage-grouse winter areas upon successful re-vegetation.

The winter seasonal travel closure would be expanded to the entire project area and a minimal number of routes would be open for snowmobile travel. The winter closure would include all motorized travel and would be in effect from December 15th through the following April 15th.or at the discretion of the Field Manager. The open snowmobile routes are indicated on Map 10. This winter closure would eliminate some of the potential impacts to sage-grouse since cross country travel or travel on roads open during summer would not be allowed.

The closure and reclamation of roads, seasonal closures, and administrative use-only restrictions would greatly reduce direct impacts such as noise and actual physical disturbance to sage-grouse during critical periods. Although these impacts cannot be quantified, the reduction in the extent of travel in the project area is projected to have a beneficial impact on sage-grouse in this alternative.

Mitigation: A mix of grasses, forbs, and sagebrush seed should be used to reclaim all roads and trails identified for closure.

Continue to coordinate all future travel management activities with the Colorado Division of Wildlife (CDOW) if these activities could impact sage-grouse.

Coordinate with the CDOW and the Middle Park Sage-Grouse Working Group to locate new strutting grounds and to monitor historic ones to determine any renewed use of them by sage-grouse. Changes in strutting ground use or the location of new ones would require modification of the approved travel management plan to assure the continued protection of sage-grouse.

Finding on the Public Land Health Standard for Threatened & Endangered Species: Two small areas in the northwest section of the project area were assessed and determined to not be meeting this standard as a result of historic livestock management practices. Livestock management practices in these areas have been modified to improve plant and animal communities and as a result of the changes, the areas are currently improving to the extent they are now meeting this standard. Motorized vehicle travel was not contributing to the poor condition of these areas

WASTES - HAZARDOUS OR SOLID

Affected Environment: The project area, in close proximity to the Town of Kremmling and immediately north of the Kremmling landfill, provides easy access for illegal dumping. As a result new dump sites are discovered on the area's public lands each spring and summer. These dump sites typically consist of household wastes such as furniture, appliances, and building materials. Small quantities of hazardous materials such as motor fuels and oils are also not uncommon at these sites.

The project area also contains a popular two acre shooting range, authorized and developed by the field office in 2000 and located immediately north of the landfill. At the time of development, OHV use in the vicinity of the site was not an issue. Since that time, the shooting range site has literally become encircled by user-created OHV routes.

Environmental Consequences: Major quantities of wastes, hazardous or solid, are not expected to be generated or stored as a result of the Proposed Action or any of the alternatives. In the Proposed Action, and the Low Use and High Use Alternatives, the frequency of dump sites found within the project area would diminish as a result of route designations with users being limited to travel on fewer routes; the development of environmental education programs and signing warning would-be dumpers of the consequences of dumping; and an increased presence of field office and Law Enforcement during project implementation. The Current Use Alternative, which would not provide for a managed route system, would exacerbate the existing dumping situation on the area's public lands, and would make law enforcement more difficult. In the Proposed Action and all alternatives, the field office would continue to mitigate wastes properly as soon as discovered. The existing shooting range would also be closed down in the Proposed Action and all alternatives to mitigate safety concerns about its location within a high density OHV use area. Testing and cleanup of the range is scheduled for 2006. Since the site was initially developed to provide an opportunity for shooters close to Kremmling, while concentrating the use at one location, a replacement site will be provided subject to community support for site operation and maintenance. The field office has begun a search for a suitable

replacement site near Kremmling, and will begin meeting with potential clubs and/or local agencies interested in operating and maintaining a new range.

WATER QUALITY, SURFACE AND GROUND WATER (includes a finding on Standard 5)

Affected Environment: Most of the Project Area is within the 5th Order Muddy Creek watershed. A portion of the area (6,550 acres) is within the 5th Order "Colorado River above Kremmling" watershed which includes the Colorado River mainstem and Troublesome Creek. Within the Project Area are segments of Muddy Creek, and its tributaries: Antelope Creek, Cow Gulch, Deer Creek, Dunning Creek, Hay Gulch, Pass Creek, Pinto Creek, and Red Dirt Creek. Starr Gulch is tributary to Troublesome Creek. (Refer to Appendix 5: Maps D, E, and F.)

Muddy Creek and its tributaries, the tributaries to Troublesome Creek, and the Colorado River are classified by the State of Colorado for Cold Water Aquatic Life-Class 1, Recreation- Class 1a, Water Supply, and Agricultural Uses. In Status of Water Quality in Colorado-2004 (Colorado Water Quality Control Division), this segment of the Colorado River mainstem had been assessed as fully supporting recreational uses in the river, but other uses were not assessed. All tributaries to the Colorado River (which includes the entire Project Area) were assessed in 2003 and are fully supporting all designated uses. Wolford Mountain Reservoir was not assessed, but recommended for the 303(d) Monitoring and Evaluation (M & E) List for suspected dissolved oxygen concerns. Listing on the M & E List indicates that there is insufficient data to determine if water quality impairment exists. Red Dirt Creek and the entire length of Muddy Creek are listed in the 2004 M & E List for possible sediment impairment. A small tributary to Muddy Creek that is located on the west of the reservoir (Alkali Gulch) is included in the 2004 303(d) List for Selenium impairment. Although the source of the selenium is the underlying native shale, selenium is on the EPA's list of priority toxic pollutants. The stream is listed as a low priority.

The BLM has collected water quality data and streamflows on Antelope Creek, Cow Gulch, Deer Creek, and Pinto Creek since 1980. In Appendix 5, Table WQ-1 summarizes the streams' major inorganics and metals concentrations. Sampling is usually limited to 1-3 times between May-October, and varies in the laboratory analyses performed. The sampling has shown water quality differences between streams on the west and the east side of the reservoir. Red Dirt Creek, Pinto Creek, and Deer Creek all have higher electrical conductivities and total dissolved solid concentrations than most of the BLM's Middle Park streams. The streams tend to also have higher sulfate and selenium concentrations. The chemical differences are due to the geology and the resulting soils in the area, and the private irrigation practices. More commonly, surface waters within the project area are dominated by calcium and magnesium ions.

There is no numeric water quality standard for sediment, as natural streams vary in their sediment loads. Colorado's Water Quality Control Division guidance for determining sediment deposition impacts to aquatic life in streams and rivers stresses that a background level needs to be determined for a stream to help separate natural from man caused nonpoint source pollution. At this time, the natural sediment loads have not been determined for Muddy Creek and its tributaries. Muddy Creek's annual dissolved-solid load was estimated by the USGS as 28,240 tons/year to the Colorado River. Other USGS work has shown that at least 97% of Muddy

Creek's total sediment load was suspended sediment. Due to the natural erosive processes, the geology, soils, and climate, at least a portion of the sediment load is natural.

Within the project area are a few areas that are felt to have fairly high soil loss and below potential vegetative cover. The area's past use is detailed in the Soils section of this document. All grazing allotment management within this area has included objectives to improve upland conditions and especially riparian conditions to help minimize nonpoint source pollution. Streamflows in Antelope, Deer, Red Dirt, Dunning, and Pinto Creek are heavily impacted by private irrigation. Portions of Pinto and Deer Creek are used as ditches, while Antelope Creek is almost dewatered by upstream diversions. In the undiverted streams, the vast majority of discharge occurs from snowmelt runoff in April and May. Localized high intensity rainstorms can also produce high amounts of runoff in small drainage areas. Improving the ground cover of the area to detain snowmelt, increase infiltration, and reduce soil detachment are some of the goals of improving watershed condition.

Ground water in the area is primarily associated with the alluvial valley bottom along Muddy Creek. A few contact springs are located around the base of Wolford Mountain, and springs provide the base flow for Cow Gulch, Hay Gulch, and Pickering Gulch. A small seep is located halfway up Horse Gulch. A spring located on State Land Board land just east of the landfill is the only known alkaline spring in the project area. There are also several livestock wells within the project area. Ground water in the area is of sufficient quality for agricultural uses while the low volume limits many other uses

Environmental Consequences: Roads can create an impermeable surface which increases runoff and can shorten the time to peak flows. With inadequate drainage, roads can become a conduit for runoff, reducing an area's ability to detain and utilize precipitation, and eroding the soils. Roads can also alter the contributing drainage area, redirecting runoff and eroding a new or larger channel. These can all increase the sediment loads in streams and affect water quality. In calculating existing and potential runoff, none of the road acreages were large enough to alter the predicted runoff within a hydrologic response unit. (Watershed Analysis, Appendix 5). It is the location and condition of roads that appear to most affect runoff and erosion, and potentially the water quality. Due to the precipitation amounts, much of the project area's runoff and sediment load from upland areas is redeposited before reaching surface water. Using the Water Erosion Prediction Project (WEPP), the first year following a disturbance often resulted in a 0-13% probability of runoff, 73-83% probability of erosion, and 0-13% probability of sediment delivery (see Appendix 5). Roads, however, can concentrate this runoff and transport it to drainages. Unfortunately, there is not a "preferred density number" or "miles of road" limit to manage for, so continual review of overall field conditions is important so that adjustments can be made as needed. Adjustments may include maintenance, improvements, seasonal closures, route realignment, vehicle restrictions, or possible closure.

Ground water quality is generally not affected by travel routes. Staging areas that are located near ground water recharge areas or spring sources have some potential to impact the ground water. For wetland values and ground water protection, no routes should be allowed in or around the spring sources.

Current Use: Under the Current Use Alternative, designation of routes would continue to be postponed. Route widening would continue, with some routes being extended to new areas.

User created routes can be located on poor soils or overly steep slopes, lacking drainage and erosion control. Other improvement efforts within the watersheds could be hindered by the amount and/or location of roads. Emergency closures generally are enacted after there are problems and resource damage has already occurred. The current snowmobile closure does not prevent vehicles from driving the roads during "dry" winters, when saturated soils are subject to rutting. Rilling and ruts, especially in the fine textured soils that dominate the area, are a significant source of sediment.

Current Use Mitigation: Signs discouraging cross country travel shall be placed at the major access points from county roads. New routes should be posted closed as soon as possible.

Yearly review of need for emergency closures should occur, with physical closures and rehabilitation of routes with resource damage occurring as soon as possible.

Low Use Alternative: The Low Use Alternative would benefit water quality by closing routes, which are located on erosive soils, steep slopes, or within the floodplain or near riparian areas. Of the 27 existing stream crossings, the 9 county/private roads and 3 other routes would remain open. The other 15 would be closed or have administrative use only. (Table SC-1 in Hydrology Section). Routes that currently transport or concentrate runoff would be reclaimed to return to natural runoff patterns. Winter closures would be extended to include all vehicles, reducing the amount of traffic that would occur on wet roads. This alternative would benefit water quality the most; however field reviews would still be conducted on selected open routes that are more susceptible to erosion problems and actions, such as drainage improvements, would be taken as necessary to protect water quality.

High Use Alternative: The High Use Alternative would close some routes identified as redundant or that have known resource problems. The total miles of open roads (196.18) are a 15% reduction from the Current Use Alternative (231.95), but roads would remain open during snowmelt conditions, creating ruts and drainage problems. Of the existing 27 stream crossings, only 2 would be restricted in use (administrative) and 4 restricted in vehicle class (3 motorcycle, 1 ATV), and 1 closed. Without road drainage improvements and implementation of best management practices to protect water quality, no measurable improvement in watershed condition is expected.

Proposed Action: The Proposed Action would result in a 41% decrease in open road miles, with an additional 28.6 miles that would be limited to administrative use only. Due to the limited traffic on the administrative use roads, over time, many of these roads would be expected to have conditions similar to closed roads that are revegetating naturally. In addition to this, the winter closure would be extended to all vehicles, reducing the amount of rutting and rilling of roads. The Proposed Action would also close roads in the historic floodplain of Cow Gulch, leaving only one motorcycle crossing of the lower portion of the creek. As this motorcycle route continues to the east-northeast, it would remain in the uplands, requiring a new upland gate, and connecting to another single-track route. The existing portion of the trail that is in the creek's floodplain would be closed. A proposed motorcycle crossing would be located above the spring source in the dry portion of the drainage. The 27 existing road crossings of drainages would be reduced, with 6 closed crossings and 4 administrative use only crossings. The existing "play area" adjacent to the Muddy Creek floodplain would be closed. Under this alternative, some of the more erodible roads would be designated for closure or administrative use only.

Mitigation: Review motorcycle crossing on route WS0057b for stream protection needs. Upgrade with bridge, stream hardening, or other appropriate measures under the High Use and Proposed Action Alternatives. Reclaim the road if the Low Use Alternative is selected.

Install an upland gate for route WS0057a under the Proposed Action Alternative. Reclaim the road if the Low Use Alternative is selected.

Monitoring of the Project Area shall occur yearly, with a focus on riparian areas, stream crossings, and erosive roads. Monitoring shall include road width, condition, and any observable use trends in addition to the current water quality monitoring.

The annual Implementation and Monitoring Plan shall identify proposed acreage to be physically disturbed by either construction or closure. The entire project's expected disturbance acreage shall be reviewed and any needed stormwater coordination formalized at that time.

As a result of monitoring, best management practices shall be implemented where needed, including closures, reroutes, or upgrades to reduce sediment transport. Reclamation of closed roads shall be prioritized by the potential to impact water quality.

Finding on the Public Land Health Standard for Water Quality: The range program is continuing to implement best management practices to improve watershed condition within the project area. The riparian areas especially have responded and are meeting or moving towards meeting Land Health Standard #5. Overall water quality in the project area is moving towards meeting standards. Water Quality monitoring indicates there may be concerns for selenium and manganese from the west side of Highway 40. Although these occur naturally, it appears that irrigation practices may be increasing their concentrations in the streams. The BLM ownership is located in the lower portion of these watersheds, and is interspersed with private. Roads are not generally used for recreational purposes, and travel is kept to the existing routes.

The Current Use Alternative and the High Use Alternative are not aggressive actions to help improve watershed condition and water quality within the project area. Without extensive funding for road improvements and the ability to implement best management practices, these alternatives would not help water quality. The Low Use Alternative's reduction of route mileage by 82% would maximize water quality protection, especially when combined with rehabilitation actions. The Proposed Action would reduce route mileage by 41%. By closing selected routes and reducing use to administrative use only on others, much of the same water quality benefits of the Low Use Alternative would be achieved. If road use greatly increases, additional restrictions or best management practices may be necessary to maintain water quality protection. Monitoring of water quality and watershed conditions will continue in the area, and as sediment studies determine natural levels for the area, the BLM will continue to implement best management practices to reduce nonpoint source pollution from their land uses.

WETLANDS & RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: The majority of the project area consists of upland areas. Due to the limited amount of wetland and riparian acreage, especially on public lands, any area that can

provide any wetland or riparian value is a priority for management. In 1987, the Kremmling Area Office designated Cow Gulch as a riparian demonstration area. This very small perennial creek had sediment deposits on the floodplain and at the mouth of side gullies, which were carried away with the next high flow. A temporary electric fence, a new grazing system, willow plantings, check dams, and a grade control structure were put in place to improve the area. As vegetation responded, motorcycle use also increased and tracks in the channel bottom created braided streams through the soft sediment deposits. Over time, fenceline routes and closed construction routes were enlarged and extended from increased vehicle use. A total of 7 stream crossings now exist in only 0.64 miles of riparian zone.

During the Cow Gulch improvements, Horse Gulch also responded to the grazing changes and vegetation started filling in the bottom of the gulch from the spring area, downstream. Horse Gulch has only intermittent surface flows and a large sediment load. Tributary gullies have talus slopes that storm flows and snowmelt carry through the gulch. Despite attempted vehicle closures, increased OHV use continues in the gulch bottom. Jeeps and full sized trucks have accessed the head of the gulch, leaving large deep rutted areas. The actual potential of Horse Gulch is difficult to determine due to continual disturbance. It is thought that the amount of natural sediment and the limited amount of water precludes the area from supporting much wetland vegetation.

Hay Gulch is a large spring fed meadow at the head of a deep gulch. A loose rock structure was installed to prevent the gully from eroding up into the wetland area. Within the gulch, the creek is creating a new floodplain and has riparian vegetation. The recently constructed Wolford Reservoir has raised the water table and decreased the channel grade at the mouth of several of the draws in the Hay Gulch area. Field reviews have found improved vegetative cover from the additional soil moisture.

As part of the Wolford Mountain Reservoir EIS, the lower portion of Muddy Creek was designated a wetland mitigation area. Rather than replacing the inundated wetlands, the project was allowed to improve the existing downstream acres, and improve the existing habitat values. The Colorado River Conservancy District is responsible for managing this area, and has used willow plantings and irrigation to improve the habitat values. No livestock grazing occurs in this area.

The BLM segments have all been inventoried by an interdisciplinary team for riparian condition, using the proper functioning condition assessment for lotic/lentic areas. Most of the areas have also had additional field assessments made and are routinely monitored for condition. A summary of BLM riparian areas within the project area is provided in Table TR-1 below:

Table TR-1

Riparian/Wetland Area	Dominant Vegetative Community	Condition Rating (impacts)	Estimated Acreage
Antelope Creek	Willow/sedge	Proper functioning condition (PFC), (private water diversions)	18.9 acres
Cow Gulch	Narrow leaf cottonwood/willow, sedge/rush	PFC/ functioning at risk (FAR)	2.4 acres
Deer Creek	Willow/poa, Willow/sedge	FAR upward trend (irrigation practices)	6.9 acres
Dunning Creek	Sedge/rush	PFC/FAR private diversions	2 acres
Hay Gulch	Sedge/rush some scattered willows	PFC	7.08 acres
Muddy Creek	willow/sedge	PFC	24.5 acres
Pickering Gulch	Sedge/rush	PFC	0.4 acres
Pinto Creek	Rush/poa	FAR, upward trend (irrigation practices)	3.2 acres
Red Dirt Creek	Sedge/rush scattered willow	FAR, upward trend (reservoir, grazing)	4.2 acres

Environmental Consequences: Due to the biological diversity that a riparian area provides and its limited acreage in western rangelands, protection of riparian areas is a primary management objective on public lands. The moister soils can sustain more damage from vehicle traffic and impacts can extend to the water quality, water table, and vegetation some distance from the road surface. Fortunately, riparian vegetation tends to respond more rapidly to improved management due to the longer, less variable growing season the higher water table provides.

Current Use Alternative: Roads that are mapped as being located in or crossing wetland/riparian areas would continue to exist, with potential road expansion. Approximately 3.02 acres of routes occur on mapped wetland soils. Currently road crossings/stream mile range from 0 to 10.94, with the potential of continuing to increase. The recreational popularity of the Muddy Creek floodplain below the reservoir could put pressure on the wetland mitigation area's ability to

provide high quality wetland habitat values. Winter closures would only apply to snowmobiles and all of the project area would be open to vehicles when roads are muddy.

Low Use Alternative: Approximately 1.5 acres of motorized routes would be on mapped wetland soils and 1.28 acres of administrative use only routes. Winter closures would keep all types of vehicles off of roads during the snowmelt season. Nine stream crossings would be closed and 7 administrative use only crossings. Road densities in small watersheds with surface waters would be greatly reduced, with most miles be limited to administrative use only. Since the riparian areas appear to be improving in condition and most of the roads are not located in the riparian zone, this may be more restrictive than needed. Restricting the Muddy Creek floodplain routes to administrative only may not result in noticeably reduced use due to the frequency of use by the Colorado River Water Conservancy District employees who manage the area.

High Use Alternative: Under this alternative, no routes on wetland soils would be closed, but 0.28 acres would be limited to administrative use and 0.17 acres would be designated for non-motorized use. One stream crossing would be closed and 2 limited to administrative use only. There would not be winter closures for vehicles during the snowmelt period, where rutting and erosion could impact adjacent riparian areas. The Horse Gulch play area, while primarily south of the gulch itself, would extend into the gulch itself in the area east of the county road.

Proposed Action: Both the Proposed Action and the Low Use Alternative close 0.01 acres in wetland areas. The Proposed Action leaves more existing routes open to the public, but restricts the use to ATVs or smaller. These smaller vehicles are also lighter than standard cars or trucks, reducing the vegetative and soil impacts. Six stream crossings would be closed and 4 limited to administrative use only. Road miles within drainage areas that have perennial surface waters are reduced from 96.92 miles to 73.47 miles (by 24%), and these miles include routes that are administrative use only, or have seasonal closures, or are for non-motorized use. By reducing stream crossings, many direct road impacts to riparian areas are eliminated. The winter closure would be extended to all vehicles, reducing the amount of erosion that occurs during wet soil conditions.

Summary: Table SC-1 in the Hydrology Section summarizes the number of stream crossings by alternative, and the Road Densities for Small Watersheds (by alternative) are displayed in Table SRD-1. Table TS-1 below compares the route designations on mapped wetland soils under each alternative.

Table TS-1
Acres of Routes on Mapped Wetland Soils

Route Designation	Current Use Alternative	Low Use Alternative	High Use Alternative	Proposed Alternative
Open	3.02			
Open with Mitigation		0.07	0.24	0.17
Closed		0.01	0.00	0.01
County or Private		1.43	1.43	1.43
Administrative Use Only		1.27	0.28	0.45
Non-Motorized		0.24	0.17	0.00
ATV		0.00	0.89	0.96
Motorcycle Acres		0.00	0.01	0.00

Mitigation: Route impacts to wetland or riparian systems shall be high priority areas for restrictions, closures, or other best management practices.

Monitoring shall be conducted in wetland areas with road crossings and roads within a 100 foot buffer zone. This is in addition to existing riparian monitoring.

Best management practices shall be implemented as soon as possible after concerns are identified.

Non-motorized trails shall also be monitored within riparian/wetland zones.

Route closures shall use rehabilitative measures to restore any wetland areas, with appropriate Section 404 permits.

Review of the Horse Gulch 'Play Area' shall be made part of monitoring. If the 'Play Area' is negatively impacting Horse Gulch, additional actions may be necessary. Under the Proposed Action Alternative, these actions might include further restricting the gulch crossing from ATV to motorcycles, closing the crossing or armoring it, reducing the size of the "Play Area", closing trails that have become "take off" points to the gulch.

Finding on the Public Land Health Standard for Riparian Systems: The riparian areas are all either meeting or moving towards meeting Standard #2. To meet standards and maximize wetland values, road impacts must be minimized as much as possible. Due to the location of open roads in drainages with riparian values, the High Use Alternative does not offer as much protection as the Low Use Alternative and the Proposed Action. The Proposed Action reduces road densities in the small watersheds with perennial drainages and the number of stream crossings, benefiting the riparian areas. Riparian Systems provide many resource benefits, including recreation. In the Muddy Creek floodplain, the Proposed Action designates more ATV routes are open to the public rather than restricting them to administrative use. The River

Conservancy District has not expressed concerns that these two tracks be closed to ATVs or that wetland habitat values have been impacted. Continued monitoring would determine if additional actions are needed under the selected alternative to help maximize riparian protection and manage the wetland mitigation area for habitat values.

WILD AND SCENIC RIVERS

Affected Environment: There are no designated Wild and Scenic Rivers near the project area.

Environmental Consequences: An inventory of rivers and streams for eligibility and suitability in the Wild and Scenic Rivers program will be conducted during the next Resource Management Plan Revision, scheduled to begin in 2006. Implementation of the Proposed Action, or the Low Use or High Use Alternatives would likely improve factors which would be considered during a Wild and Scenic River Study. Even the High use Alternative would reduce overall motorized use by 15% and use would be more closely managed in a designated route system in all but the Current Use Alternative.

WILDERNESS

Affected Environment: The Troublesome Wilderness Study Area (WSA) is located about 2 miles northeast of the project area. The WSA is currently closed to motorized use and the designation would not be affected by this project.

Environmental Consequences: There would be no impacts to the existing WSA as a result of either the Proposed Action or any of the alternatives.

NON-CRITICAL ELEMENTS

SOILS (includes a finding on Standard 1)

Affected Environment: The project area is primarily located within the Muddy Creek watershed. In the Kremmling RMP, the Muddy Creek watershed was identified as a sensitive watershed. Sensitive watersheds are areas where geologic, vegetative, or soil conditions cause a fragile situation. The RMP noted that "Small changes in land use intensity can cause large changes in erosion rates. Some of these areas are already experiencing accelerated erosion". In the RMP Record of Decision, it was determined that improvements or protection of sensitive watersheds would generally be done as a part of other resource actions. Dispersed recreation was recognized as a compatible use within a sensitive watershed, with restrictions placed on some ORV use.

The project area is located in rangelands with a short growing season and low precipitation. The area receives intense sunlight and strong drying winds during much of the year. The soils in the area tend to have fairly low fertility and the vegetative response to improved management can be slow, especially during poor growing years. Summer moisture tends to come as short duration, high intensity thunderstorms which exceed the soils' infiltration rates and result in runoff rather

than soil moisture recharge. Soil information for the area is published in the Natural Resource Conservation Service's Grand County Survey. Appendix 5 (Watershed Analysis) contains some of the Survey's information for the area.

Livestock grazing, with base ranch properties adjacent to the area's public lands, has occurred for a long time. Historically, this resulted in areas of heavy livestock use. Today's gulches and gullies are evident in aerial photos of the 1930s and 1950s. In the 1960s, some of the project area was designated a Resource Conservation Area (RCA) and rangeland management practices were demonstrated there. Portions of the RCA were brush beat and seeded, and several water projects, fences, and even a demonstration road were constructed. The access routes to these projects are a part of the route system within the project area. Unfortunately, immediately after the improvements, livestock numbers were more than doubled and rest or deferment from grazing was not practiced. Since the RMP, continued efforts have been made to improve rangeland conditions in the area. Grazing systems, livestock reductions, and rangeland projects have been helping to improve overall upland conditions, which benefit soil resources by increasing vegetative cover, litter, and infiltration.

The roads within the area are primarily user created. Project access routes, game and wildlife trails, and hunter routes account for most of these user-created routes. Because they are user created and not engineered, these routes may not have adequate drainage or be located on stable soils, and over time some have become braided to avoid puddles or wash outs. As recreational use of the area has increased, existing "trails" have become wider and more pronounced and new routes have appeared. There are several areas within the project area where roads are contributing to erosion concerns.

Environmental Consequences: The soils contained in an actual road "path" or road bed are invariably compacted and void of vegetation. The soil protection objectives within the project area include reducing the acreage of roads within the project area, and reducing the indirect impacts to soils from roads. For example, the uncontrolled runoff from roads can result in sediment loads to surface waters or gullying of adjacent areas. To analyze the roads within the project area, soil, slope, and hydrologic soil group overlays were created to determine which routes were located on more erosive soils, or other areas of concern. Road densities in hydrologic response units were also reviewed to help identify possible existing problems. (Watershed Analysis, Appendix 5).

The slope overlay for the roads found that few roads were located on steep (>30%) slopes of the project area. Individual routes do, however, have steep segments that may not be reflected in the overlay. Some routes in the Cow Gulch and Wolford Mountain areas with steep slopes were field measured in 2004 so that soil loss equations could be applied to the routes. Using the Revised Universal Soil Loss Equation, a steep vegetated slope had an annual soil loss of 0.07 tons/acre/year. When vegetation was removed, soil losses would increase to more than 8 tons/acre/year. Using WEPP, a road in the upper part of the drainage, with steep slopes, might result in 0.04 tons/acre loss (annual average for 30 years). Sediment leaving the profile was calculated at 0.009 tons/acre. When the same road was in the lower part of the drainage, erosion rates were 0.97 tons/acre, and sediment actually leaving the profile was calculated at 0.24 tons/acre.

Current Use Alternative: Under the Current Use Alternative, accelerated soil erosion would continue within the project area. Winter closures would not prevent vehicles from driving the roads during snowmelt, increasing soil loss and erosion damage. Routes that cross erosive soils or lack drainage would remain open unless damage merited an emergency closure. Without route designations, user-created trails could start to increase on the western portion of the project area where saline "D" soils dominate. Continued route widening and new route creation would be expected in the project area.

Low Use Alternative: Under the Low Use Alternative, total route mileage open to any motorized travel would be decreased from 232.0 miles to 116.9 miles. In this closure, 64% of the remaining routes (75.0 miles of the 116.9) would be limited to Administrative Use Only. Both the closed routes and many of the administrative routes would have increased vegetative cover and reduced wind and water erosion. Open routes in the "Wolford Mountain North" portion of the area would be further decreased, and winter closures would be extended to include all vehicles. Having roads closed during snowmelt conditions will greatly reduce soil rills and ruts. The western portion of the project area would not have increases in route density, where soil concerns exist. A minimal 'play area' would be designated south of Horse Gulch, where impacts have already occurred.

High Use Alternative: The High Use Alternative uses some closures and administrative use-only designations to reduce road impacts. The reduction to 215.39 miles, however, does not significantly alter soil impacts. Keeping the routes open during snowmelt conditions also allows for continued vehicle damage to soils when soils are most susceptible. The majority of the open roads would require additional best management practices to reduce soil impacts.

Proposed Action: The Proposed Action reduces routes open to any motorized travel by 27.7%, from 232.0 miles to 167.6 miles, with 28.6 miles being administrative use only. The closures reduce route acreage by 18%. Since county roads obviously remain open and directly impact the most acreage, this difference is understandable. The Proposed Action would reduce road densities (mi/sq miles) within drainage areas with the highest potential to produce runoff (based on soils and vegetative cover- see Watershed Analysis). Examples include:

"Red Dirt" road density decreased by 44.9%
"Pickering Gulch" road density decreased by 22%
"MtnRes" road density decreased by 27%
"Mine Shaft" road density decreased by 17%.

By closing roads or limiting use on roads that are located on more erosive sites, soil protection benefits were maximized without as drastic of an impact to other resources as the Low Use Alternative. Extending the winter closure to all vehicles also reduces the rutting of roads that occurs during the snowmelt.

Mitigation: Strict enforcement of closures shall be conducted to protect soil resources.

Use of emergency closures to protect resources if needed until remedial actions can be implemented.

The Monitoring Plan shall include monitoring of the designated 'Play Area' and impacts to Horse Gulch.

Steep slopes, poor sites (example- Cryorthent) and wetland areas shall be soil priorities for rehabilitating closed routes.

Additional seasonal restrictions or best management practices shall be reviewed for areas of continued erosion.

The Monitoring Plan shall address monitoring of use levels and associated impacts, and discuss options to deal with increases.

Closed routes shall be field reviewed to determine if actions are needed to stabilize the route or to help revegetate it.

Finding on the Public Land Health Standard for Upland Soils: The Project Area has been field reviewed for Land Health Standards during the grazing permit renewal process. Generally the soils were meeting the Standards on a landscape scale, although specific areas had concerns due to the proliferation of roads and or due to the poor vegetative cover. There were three areas that were considered to be functioning at risk, due to past grazing levels and management. Actual soil health improvement is extremely slow, especially in these dry upland areas. Land practices that increase ground cover, reduce erosion, and retain moisture benefit the soils and help the area achieve or move towards achieving the upland soil land health standard. Transportation Management is an essential component to improve soil health within the Muddy Creek watershed. The Current Use and High Use Alternatives are not aggressive steps to improve conditions within the sensitive watershed. Road maintenance and other practices needed to measurably reduce soil erosion would be expensive. The Proposed Action and the Low Use Alternative would measurably reduce existing erosive roads, helping improve overall soil health.

VEGETATION (includes a finding on Standard 3)

Affected Environment: Within the project area, elevations range from 7,400 feet in Kremmling to 9,200 feet at the top of Wolford Mountain, with an annual precipitation range of 10-17 inches. Seven significant range sites (dry exposure, dry mountain loam, mountain loam, mountain shale, rocky loam, stony loam, deep clay loam) as defined by the Natural Resource Conservation Service are found within the project area. The project area includes 15 livestock grazing allotments.

Sagebrush steppe is by far the most extensive vegetation community within the project area covering approximately 92% of the land. Coniferous forest can be found on Wolford and Little Wolford Mountains and on some other north facing slopes where extra moisture accumulates. Aspen groves are scattered throughout the project area, mostly at higher elevations where soil and moisture conditions are favorable.

Sagebrush steppe is dominated by big sagebrush (*Artemisia tridentata*) with small amounts of serviceberry (*Amelanchier alnifolia*), snowberry (*Symphoricarpus oreophilus*), rabbitbrush (*Chrysothamnus* spp), bitterbrush (*Purshia tridentata*), and greasewood (*Sarcobatus vermiculatus*) scattered throughout the project area where soil and moisture conditions are appropriate. The understory is composed of grasses and forbs that can vary widely from year to

year depending on precipitation. The more dominant grasses are found throughout the project area in varying degrees depending on current soil and moisture conditions and past livestock grazing management practices. Dominant grasses from the past that still dominate smaller areas within the project area include bluebunch wheatgrass (*Pseudoroegneria spicatum*), needle-and-thread (*Hesperostipa comata*), Junegrass (*Koeleria macrantha*), Idaho fescue (*Festuca idahoensis*), and Indian ricegrass (*Achnatherum hymenoides*). Other grasses have increased with the heavy grazing pressure applied in the past. These grasses, such as bluegrasses (*Poa* spp), western wheatgrass (*Pascopyron smithii*), pine needlegrass (*Achnatherum pinetorum*), and squirreltail (*Elymus elymoides*) are prominent grasses that provide valuable forage for livestock and wildlife.

Wolford and Little Wolford Mountains support a small coniferous forest on the top and north side of the mountains. The forest is lodgepole pine (*Pinus contorta*) in the more mesic sites with Douglas fir (*Pseudotsuga menzeisii*) and Englemann spruce (*Picea engelmannii*) with some intermixed lodgepole pine and occasional aspen (*Populus tremuloides*) groves on the north and east facing slopes.

Aspen groves are scattered throughout the project area and are generally made up of mature trees, with some seedlings and saplings, unless livestock and/or wildlife grazing is keeping the grove from regenerating. The understory is generally dense perennial grasses and forbs creating a site that is popular with wildlife, livestock, and recreationists. The forb component is highly variable from year to year depending heavily on the amount of precipitation from the previous fall and current spring. Forbs that occur on this site include, but are not limited to, daisies (*Erigeron* spp.), bluebells (*Mertensia* spp), wild buckwheat (*Eriogonum* spp), rose pussytoes (*Antenneria rosea*), phlox (*Phlox* spp), yarrow (*Achillea lanulosa*), lupine (*Lupinus* spp), groundsel (*Senecio* spp), penstemons (*Penstemon* spp), Indian paintbrush (*Castilleja* spp), Canada thistle (*Cirsium arvense*), fringed sage (*Artemisia frigida*), milkvetch (*Astragalus* spp), locoweed (*Oxytropsis* spp), and bastard toadflax (*Comandra umbellate*).

The high density 'play area' which has been proposed for use by OHVs and motorcycles are mostly steep slopes that had very little vegetation prior to disturbance by motorized vehicles. The vegetation would continue to degrade as the amount of disturbance increases. However, the 'play area' is small and the overall impact to the project area's vegetation would be minor.

Riparian vegetation communities are found along Muddy Creek, Hay Gulch, Cow Gulch, Pinto Creek, Antelope Creek, Deer Creek, Red Dirt Creek, Pickering Creek, and Dunning Creek. These areas are discussed in the Wetlands and Riparian Zones Section.

One known endangered plant species grows in the project area. The Osterhout milkvetch (*Astragalus osterhoutii*) is found in some of the southern sections of the project area and near Wolford Reservoir. See the Threatened and Endangered Species section of this EA for a complete assessment of this species.

Some areas around Wolford Reservoir and below the dam in Muddy Creek are included in the Wolford Reservoir mitigation area but have been withdrawn from livestock grazing. These areas have not been assessed for compliance with the Standards.

Environmental Consequences: None of the alternatives or the Proposed Action would have a major impact on the vegetation in the project area. Areas of disturbance for all alternatives would be small and isolated compared to the total acreage within the project area. However, each road that is closed and reclaimed would create a slight increase in the amount of desired vegetation in the project area. Eliminating cross country travel by motorized vehicles would also have a slight positive impact on the vegetation.

Winter closure of the project area to motorized vehicles, except on authorized snowmobile routes, would not impact the vegetation.

Mitigation:

A vegetation monitoring program was implemented within the Kremmling Resource Management Plan in 1984. This monitoring program should continue to be followed with implementation of the Wolford Travel Management Plan.

The project area should be included in the Kremmling Field Office Weed Management Program. Additional monitoring and treatments should be conducted by the BLM to control weeds during the reclamation when these reclaimed-route areas would be more susceptible to weed invasion and spread. Once the reclaimed route areas become revegetated the chance for weeds to become established is greatly diminished.

All livestock grazing permittees would be required to follow the rotation grazing systems that have been implemented during the livestock grazing permit renewal process.

Finding on Standard #3 for Public Land Health for Upland Vegetation: All fifteen of the livestock grazing allotments within the project area have been assessed for compliance with the Standards for Public Land Health in Colorado. Three of the allotments failed the upland vegetation portion of Standard #3 which states "*healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential. Plants and animals at both the community and population level are productive, resilient, diverse, vigorous, and able to reproduce and sustain natural fluctuations and ecological processes."* Livestock grazing, not motorized use, was determined to be a causative factor in the allotments failing the vegetation portion of Standard #3. Historically, the project area was heavily grazed season long. The grazing systems were not resource oriented and resulted in many areas being overgrazed year after year with a corresponding decline in vegetation quality and quantity. An increase in undesirable native species such as rabbitbrush (*Chrysothamnus* spp) and broom snakeweed (*Gutierrezia sarothrae*) has resulted from the past grazing practices. These two native species are grazed only sparingly by livestock or wildlife and can be a problem in areas where they become dominant.

As livestock grazing permits are renewed, rotation grazing systems are implemented whenever possible. Rotation grazing systems, especially those that include rest, have proven to be beneficial to vegetation and to promote vegetation recovery. Deferred and rest rotation grazing systems are appropriate actions that have been implemented to move the project area's allotments toward compliance with Standard #3.

The Mitchell Allotment (07541) was assessed for compliance with the Standards for Public Land Health in Colorado in 1999. Approximately 1450 acres in the allotment were determined to not be in compliance with the vegetation portion of Standard #3. The allotment lacks species diversity, contains too much bare soil with obvious and well defined water flow patterns, and pedestaling of plants was common, even to the extent of having exposed roots. Desired species were not found in sufficient proportions and production was less than what it should be. A 500 acre parcel of land in the Long Pipe pasture was determined to not be in compliance due to an over abundance of crested wheatgrass. This area was disked and seeded with crested wheatgrass in the late 1960's. Crested wheatgrass is an aggressive water user that tends to prevent other species from becoming established. The rotation grazing system that was implemented with the 1999 livestock grazing permit renewal is the appropriate action that was taken to bring the allotment into compliance with the vegetation portion of Standard #3. The condition of the vegetation has begun to improve through implementation of the rotation grazing system, however, more time is needed for the vegetation to recover sufficiently to meet the minimum requirements for the allotment to be in compliance with the vegetation portion of Standard #3.

The Fitch allotment (#07754) and the Brown allotment (#07758) failed the vegetation portion of Standard #3. Both of these allotments consist almost entirely of mountain shale range sites. The mountain shale range site has poor soils and low annual production. Historic livestock grazing was cited as the main cause for these allotments failing Standard #3. In 2003, a rest rotation grazing system was implemented on the Fitch allotment (#07754) as an appropriate action to bring the allotment into compliance with Standard #3. To date, the new grazing system has not had sufficient time to produce positive effects on the vegetation in this allotment. The Brown allotment (#07758) was assessed for compliance with the Standards in June 2004. It failed Standard #3 because the vegetation lacked diversity and there was too much bare soil. Appropriate actions will be decided upon during the 2004-2005 winter season and implemented during the 2006 livestock grazing permit renewal process.

The other twelve allotments passed the Standards for Public Land Health in Colorado, as determined by a BLM interdisciplinary team during field assessments. These allotments have had rotation grazing systems implemented since 1999. Rotation grazing systems have proven to be good for vegetation and will improve the condition of the project area's rangelands.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: The project area includes seven small perennial streams, Wolford Mountain Reservoir, and Muddy Creek, the largest stream in the plan area. Segments of these seven small perennial streams flow through the project area and into Muddy Creek or Wolford Mountain Reservoir. These streams are Antelope Creek, Cow Gulch, Deer Creek, Dunning Creek, Hay Gulch, Pinto Creek, and Red Dirt Creek. Of the aquatic habitats associated with these drainages, only Muddy Creek and Wolford Mountain Reservoir support aquatic wildlife on a yearlong basis. The remaining streams do not flow enough water to support either fish or water dependent mammals. Muddy Creek and Wolford Mountain Reservoir support a variety of coldwater fish including German brown trout, rainbow trout, sculpin, and several species of suckers and minnows. Antelope Creek which flows through the northern section of the project area supports a stable population of Colorado River cutthroat trout; however, cutthroats do not occur in the project area due to water depletions from Antelope Creek above the project area's

northern boundary. Northern leopard frogs, tiger salamanders, and wandering garter snakes inhabit the shallow waters and wetlands of the Muddy Creek drainage. Muddy Creek also provides habitat for beaver, muskrat, and river otters.

Environmental Consequences: Any road located adjacent to aquatic habitat can have negative impacts on the quality of the habitat for wildlife species. Roads and trails in unstable soils which may be some distance away can also impact aquatic habitat if slopes are such that sediment is carried by gravity flow to the water. Mitigation would be necessary to reduce erosion and sediment flow to aquatic habitats caused by roads and trails located upstream from these habitats.

Current Use Alternative: Roads and trails which are currently adding sediment to the aquatic habitats listed above would continue to do so. The high motorized use areas adjoining Muddy Creek would likely expand and could add more sediment to the creek in the future. Additional sediment could degrade water quality for aquatic wildlife. As is displayed in Table 3, no reductions in routes open for motorized travel would occur in this alternative since open or closed designations would not be used. The existing snowmobile travel restriction would remain in effect and would apply only to snowmobiles. Motorized travel with all other types of motorized vehicles during winter would be allowed to continue in the project area if snow conditions allowed. Unfrozen, wet soils during winter would be rutted and roads and trails in steep unstable soils could add sediment to the drainages listed above.

Low Use Alternative: This alternative would benefit aquatic wildlife habitat by closing routes that are located on erosive soils, steep slopes, or within floodplains or riparian areas. Numerous routes adjacent to Muddy Creek that currently transport sediment bearing runoff would be closed to vehicle travel and reclaimed. The winter travel restriction would be expanded to include all motorized vehicles rather than only snowmobiles reducing the amount of travel that would occur on wet roads and trails. This alternative would be the most beneficial to aquatic wildlife.

High Use Alternative: This alternative would have impacts to aquatic wildlife similar to the Current Use Alternative since most existing roads and trails would remain open to motorized vehicle travel (Table 3). More routes would be open to winter travel in this alternative compared to the Current Use Alternative although the restriction would include all motorized use rather than only snowmobiles. More routes would be susceptible to damage and erosion as a result of vehicle travel during wet periods. Some additional sediment flow into Muddy Creek and tributaries would result in the long term. More sediment would degrade habitat for aquatic species inhabiting Muddy Creek and tributaries if this would be allowed to happen.

Proposed Action: Numerous roads and trails located in close proximity to Muddy Creek, the most important aquatic habitat in the proposed travel management plan area, would be closed and reclaimed. The heavy motorized use area adjacent to Muddy Creek would be closed and reclaimed as would numerous roads and trails located on the east side of Muddy Creek. These actions would decrease potential sediment loads and improve water quality. The total BLM road miles in the project area available for public motorized travel would be reduced from 231 to 138. Aquatic habitat associated with Cow Gulch and Horse Gulch would be protected since both drainages would be closed to motorized travel with the exception of one crossing in each drainage. Each of these crossings is located above the aquatic habitat provided by the drainages. The winter travel restriction would be expanded to include all motorized travel rather than just snowmobile travel, and would include the entire project area. This restriction would protect

routes designated open for travel from vehicle caused erosion problems during times when routes would be wet rather than frozen.

Mitigation: Coordination shall occur with the KFO Soil, Water, and Air program to implement best management practices to correct vehicle travel-caused sedimentation problems in Muddy Creek or any of its tributary drainages.

Finding on the Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial): The aquatic habitat provided by the creeks and reservoir listed above are meeting this standard at present. Implementation of the any of the actions discussed, including the Current Use or No Action Alternative, would not change this finding in the foreseeable future. However, implementation of the Proposed Action or Low Use Alternative would more likely assure this standard would continue to be met in the future for aquatic wildlife.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The proposed project area provides habitat for a variety of upland wildlife species ranging from small rodents to large herbivores and carnivores. Some of the more common species inhabiting the project area include bobcats, badgers, coyotes, red foxes, mountain cottontail rabbits, white-tailed jackrabbits, several species of ground squirrels, voles, and mice. Five species of mammals classified as big game animals by the Colorado Division of Wildlife inhabiting the project area include mule deer, pronghorn antelope, Rocky Mountain elk, and mountain lions. Black bears are observed on occasion in the project area. Vegetation in this area is primarily sagebrush steppe with isolated tracts of forest habitat composed of Douglas fir and lodgepole pine found on Wolford Mountain and Little Wolford Mountain. The Vegetation section of this report lists in detail the vegetative species found in the project area. Small isolated stands of quaking aspen are located on Wolford Mountain and Little Wolford Mountain in the Twin Peaks to Gunsight Pass areas. Elevation decreases from the north end of the plan area to the south with the highest elevations occurring on Wolford Mountain and Little Wolford Mountain. The slopes on these two mountains as well as Twin Peaks and Gunsight Pass offer breaks in the relatively flat topography typical of most of the project area. Big game animals migrate from north to south as snow depths increase in the planning area. In severe winters with deep snow, deer, elk, and pronghorn migrate as far south as Kremmling and the Colorado River. The southern and southwestern slopes of Wolford and Little Wolford become extremely important as winter habitat for deer and elk during these periods. These slopes are exposed to the sun and wind resulting in snow depths that are less than areas with little or no slope. More vegetation utilized by wildlife for cover and forage is then available on these slopes during winter.

Public land is becoming increasingly important to big game animals in the project area because of habitat loss on adjoining private land. Numerous acres of private land have been converted from agricultural rangeland to residential subdivisions from the Gore Range west of the project area to Troublesome Creek. Most of the value of these private lands as wildlife habitat has been compromised or eliminated altogether. The loss of habitat has been especially detrimental to mule deer since some key winter habitat has been converted to home sites and infrastructure associated with development.

Vehicle travel in the project area has also impacted habitat conditions for the area's terrestrial species. The expansion of roads and trails in the plan area has added to the loss of vegetation which would, if available, be utilized by upland wildlife, especially big game animals during winter. The expansion of roads and trails has fragmented habitat in the travel plan area, however, the limited amount of travel and the primitive nature of most roads and trails have not rendered any of the fragmented parcels unusable by wildlife. Vehicle travel is insignificant during normal winters in the proposed plan area since snow depth prevents travel by vehicles other than snowmobiles. To minimize conflicts between snowmobile travel and wintering big game animals, a snowmobile travel restriction was implemented in the project area in the early 1980s and has remained in effect since then.

The entire project area is considered important habitat for mule deer, Rocky Mountain elk, and pronghorn antelope by the Colorado Division of Wildlife (CDOW), as well as the BLM. The project area is especially important for these species during winter and the entire area is considered crucial to the continued well being of the deer, elk, and pronghorn herds inhabiting the Muddy Creek drainage. Pronghorn are summer as well as winter residents in the project area while deer and elk are primarily winter residents. These three species are considered priority species for management in the project area and will be addressed in detail in this analysis. The other species mentioned above are considered important, however, their habitat overlaps with the habitat for deer, elk, and pronghorn, and is therefore included in the analysis for these three key big game species. According to the Colorado Division of Wildlife, deer, elk, and pronghorn numbers in the Muddy Creek drainage are above population goals and the overall herd health of these species is excellent. The Division has increased the numbers of hunting licenses in this area in an attempt to lower populations to current management objectives.

Habitat for deer, elk, and pronghorn in the proposed travel management plan area has been characterized as winter range, winter concentration areas, and severe winter range by the CDOW and these terms are defined by CDOW as follows:

Winter range is that part of the overall range where 90 percent of the individuals are located during the average five winters out of ten from the first heavy snowfall to spring green-up, or during a site specific period of winter defined for each DAU (Data Analysis Unit).

Winter Concentration Area is that part of the winter range where densities are at least 200% greater than the surrounding winter range density during the same period used to define winter range in the average five winters out of ten.

Severe Winter Range is that part of the winter range where 90% of the individuals are located when the annual snow pack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten.

The acres of severe winter range for deer, elk, and pronghorn are the most limited of the categories of winter range and are the most critical to the survival of these species in the project area. Severe deer winter ranges are located in the southern one third of the proposed plan area, in the Wolford Mountain–Little Wolford Mountain area. Pronghorn severe winter range is located in the extreme southeast section of the plan area from U.S. 40 north to Starr Gulch. Severe winter range for elk has been identified as the southern half of the proposed plan area.

Maps illustrating the locations the various categories of winter habitat for deer, elk, and pronghorn are available in the Kremmling Field Office.

Acreages of winter habitat categories within the project area on BLM lands were calculated for deer, elk, and pronghorn and are shown in Table TW-1 below.

Table TW-1
Winter Habitat Areas in Acres on BLM Lands in Project Area

Species	Winter Range Habitat Area	Winter Range Concentration Habitat Area	Severe Winter Range Habitat Area
Mule Deer	33,152	15,241	4,603
Pronghorn Antelope	7,896	3,013	2,104
Rocky Mountain Elk	33,152	20,453	16,145

Environmental Consequences: As mentioned above, the scope of this analysis is limited to mule deer, elk, and pronghorn since these species have been designated as priority species for management by the Colorado Division of Wildlife and the Bureau of Land Management. Other terrestrial wildlife species that inhabit the project area would be impacted by travel in the area similar to ways in which deer, elk, and pronghorn are impacted so other species will not be specifically addressed. Tables TW-2 through TW-5 below display the miles of route open, closed/reclaimed, and restricted to administrative use only for deer, elk, and pronghorn winter habitat in each of the alternative and Proposed Action discussions below, since winter range for these species is considered a high priority use of project area. These tables are necessary to illustrate the differences in miles and acres of routes proposed as open and closed in each case.

Current Use Alternative: This alternative would result in the existing roads and trails remaining open with only a few closures in place. Little forage and cover vegetation would be replaced since in the winter ranges occupied by deer, elk, and pronghorn. This alternative would allow more direct disturbance to wildlife during summer to continue than would any of the alternatives since more roads and trails would be open to travel. Table TW-2 below depicts the impacts of roads and trails in the winter use areas for deer, elk, and pronghorn. These impacts would also apply to other terrestrial wildlife that impact the proposed travel management plan area.

The current snowmobile travel restriction would continue as it exists. Snowmobile travel would be limited to designated sections of County Roads 22, 25, and 224 from December 1 through April 30 annually (see Map 4). The limitation restricts snowmobiles operating on snow to designated and marked routes. A total of 126.7 miles of BLM and County routes would be open to winter travel. It does not restrict other motorized vehicles and in low snowfall winters, motorized vehicles can access areas which are used by wintering big game animals. Fewer refuge areas for big game animals would be available during winter in this alternative especially in light snowfall years.

Table TW-2
Route Status by Miles/Acres in Key Species Winter Habitat Areas in Current Use Alternative

Species/Winter Habitat Area Type	Open to Motorized Use	Closed/Reclaimed or Open to Admin Use Only
Mule Deer/Winter Range	230.5 mi/130.6 ac	4.2 mi/2.6 ac
Mule Deer/Winter Concentration	127.1 mi/69.2 ac	2.7 mi/1.7 ac
Mule Deer/Severe Winter Range	41.9 mi/21.9 ac	2.1 mi/1.3 ac
Pronghorn/Winter Range	85.1 mi/47.0 ac	0.1 mi/0.1 ac
Pronghorn/Winter Concentration	127.1 mi/69.2 ac	2.7 mi/1.7 ac
Pronghorn/Severe Winter Range	41.9 mi/21.9 ac	2.1 mi/1.3 ac
Elk/Winter Range	230.5 mi/130.6 ac	4.2 mi/2.6 ac
Elk/Winter Concentration	131.1mi/75.3 ac	3.9 mi/2.4 ac
Elk/Severe Winter Range	126.1mi/69.2 ac	1/7 mi/1.1 ac

Low Use Alternative: This alternative would be the most beneficial to terrestrial wildlife inhabiting the project area including deer, elk, and pronghorn. This alternative would be the most restrictive of the alternatives to motorized travel in the plan area and would result in the closure and reclamation of more routes than any other alternative. Less direct disturbance to wildlife during summer would occur since more areas would be closed to travel than any other alternative. More vegetation would become available for winter use by deer, elk, and pronghorn and for summer use as well by a variety of other terrestrial species. Table TW-3 below quantifies the routes and trails in big game winter habitat in the project area in the Low Use Alternative.

In this alternative, winter travel in the project area would be more restrictive than any of the alternatives. A total of 31.9 miles of BLM and County routes would be designated open to snowmobile and other motorized vehicle travel; no travel off the designated routes would be permitted. Winter travel would be restricted beginning December 15 and ending the following April 15 or dates determined appropriate by the Field Manager. Little disturbance to wildlife during winter would occur since the majority of the plan area would be closed to winter motorized travel.

Table TW-3
Route Status by Miles/Acres in Key Species Winter Habitat Areas in Low Use Alternative

Species/Winter Habitat Area Type	Open to Motorized Use	Closed/Reclaimed or Open to Admin Use Only
Mule Deer/Winter Range	38.4 mi/23.7 ac	194.2 mi/117.7 ac
Mule Deer/Winter Concentration	24.5 mi/12.9 ac	102.2 mi/61.9 ac
Mule Deer/Severe Winter Range	4.2 mi/2.4 ac	38.0 mi/23.1 ac
Pronghorn/Winter Range	24.7 mi/14.2 ac	53.7 mi/32.5 ac
Pronghorn/Winter Concentration	11.9 mi/7.0 ac	18.0 mi/10.9ac
Pronghorn/Severe Winter Range	7.6 mi/4.3 ac	12.8 mi/7.8 ac
Elk/Winter Range	38.4 mi/23.7 ac	194.0 mi/117.7 ac
Elk/Winter Concentration	11.2 mi/6.6 ac	119.6 mi/72.5 ac
Elk/Severe Winter Range	19.9 mi/11.2 ac	106.6 mi/64.6 ac

High Use Alternative: This alternative would improve habitat as compared to the existing travel conditions for the key species and other wildlife that inhabit the project area. This alternative would close and reclaim a number of roads and trails in important winter habitat for deer, elk, and pronghorn, but would allow a high number of roads and trails to remain open to travel. Less vegetation for terrestrial species would be available in this alternative than any others except the Current Use. More direct disturbance would occur to wildlife during summer since more area would remain open to both motorized and non motorized travel than the Proposed Action or Low Use alternatives. Table TW-4 below summarizes by key species winter habitat, the roads and trails designated open and those designated closed and reclaimed in the High Use Alternative.

Implementation of this alternative would open the majority of the plan area to winter motorized travel on designated routes. A total of 92.6 miles of BLM and County routes would be designated open for winter travel between December 15 and April 15 annually. A limited number of refuge areas for deer, elk, and pronghorn would be available because of the number of miles or route designated open for winter travel. More deer, elk, and pronghorn would be displaced from traditional winter ranges by vehicle travel would be forced to less desirable habitat or to unsafe areas adjoining U.S. 40. Harassment by motorized vehicle travel both intentional and unintentional would cause additional stress if vehicle travel would force big game animals to move long distances especially during winters with average or above average snow depths.

Table TW-4
Route Status by Miles/Acres in Key Species Winter Habitat Areas in High use Alternative

Species/Winter Habitat Area Type	Open	Closed/Reclaimed or Open to Admin Use Only
Mule Deer/Winter Range	196.3 mi/115.8 ac	39.4 mi/58.9 ac
Mule Deer/Winter Concentration	160.0 mi/61.8 ac	20.6 mi/12.5 ac
Mule Deer/Severe Winter Range	32.1 mi/18.4 ac	10.1 mi/6.1 ac
Pronghorn/Winter Range	66.2 mi/38.7 ac	12.2 mi/7.4 ac
Pronghorn/Winter Concentration	9.4 mi/16.5 ac	2.6 mi/1.1 ac
Pronghorn/Severe Winter Range	19.5 mi/11.6 ac	1.0 mi/0.6ac
Elk/Winter Range	196.3 mi/115.8 ac	39.4 mi/23.9 ac
Elk/Winter Concentration	105.2 mi/59.7 ac	25.6 mi/15.6 ac
Elk/Severe Winter Range	102.1 mi/59.6 ac	24.3 mi/14.7 ac

Proposed Action: This alternative would provide for a reasonable amount of travel on roads and trails and would also improve and protect upland habitat for a variety of wildlife species in the project area. Since the entire travel plan area is considered mule deer and elk winter range, implementation of this alternative would result in a gain of acreages when roads and trails are closed and reclaimed or designated for administrative use only which would eventually be re-vegetated to a near natural state. Table TW-5 below shows the impacts of roads and trails in winter habitat categories for deer, elk, and pronghorn. As is obvious when comparing similar tables in the other alternatives addressed, the Proposed Action would result in a gain of habitat winter habitat for all three species addressed since existing roads and trails (Current Use Alternative) would be closed and reclaimed or restricted to administrative use only. Other sagebrush dependent wildlife species would also benefit from the additional vegetation available if the Proposed Action is implemented.

The winter seasonal closure area would be expanded to the entire project area and a minimal number of routes would be open for snowmobile use. A total of 37.7 miles of BLM and County routes would be designated open for winter travel. The winter travel restriction would be expanded to include all motorized vehicle travel between December 15 through the following April 15. All motorized travel would be limited to designated routes as illustrated on Map 10. No cross country travel would be allowed. The Field Manager would be able to modify the dates and type of vehicle use allowed on an as needed basis depending of field conditions after consulting with the BLM Wildlife Biologist, other resource specialists, and the Colorado Division of Wildlife. This winter closure would reduce the conflicts between wintering big game animals and motorized vehicle travel since travel would be limited to designated routes through identified winter concentration areas. Sufficient winter habitat would be available to

offer big game animals a refuge from snowmobile disturbances. In addition, motorized travel other than snowmobiles would be limited to designated routes even when light snow conditions allowed travel on routes designated for summer motorized travel. This additional restriction would eliminate conflicts between wintering big game animals and vehicles in light snow years.

Table TW-5
Route Status by Miles/Acres in Key Species Winter Habitat Areas in the Proposed Action

Species/Winter Habitat Area Type	Open	Closed/Reclaimed or Open to Admin Use Only
Mule Deer/Winter Range	138.0 mi/79.0 ac	97.0 mi/59.0 ac
Mule Deer/Winter Concentration	89.7 mi/43.2 ac	50.6 mi/30.7 ac
Mule Deer/Severe Winter Range	24.3 mi/13.2 ac	19.2 mi/11.6 ac
Pronghorn/Winter Range	47.6 mi/27.1 ac	29.5 mi/17.9 ac
Pronghorn/Winter Concentration	21.9 mi/12.5 ac	8.0 mi/4.9 ac
Pronghorn/Severe Winter Range	12.0 mi/7.0 ac	8.0 mi/4.8 ac
Elk/Winter Range	138.0 mi/79.0 ac	97.0 mi/30.7 ac
Elk/Winter Concentration	91.7 mi/53.0 ac	56.2 mi/53.1 ac
Elk/Severe Winter Range	75.9 mi/42.2 ac	59.3 mi/31.7 ac

Finding on the Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Aquatic): Two small areas in the northwest section of the project area were assessed and determined to not be meeting this standard as a result of historic livestock management practices. Livestock management practices in these areas have been modified to improve plant and animal communities and as a result of the changes, the areas are currently changing to the extent they are meeting this standard. Motorized vehicle travel was not contributing to the poor condition of these areas.

OTHER NON-CRITICAL ELEMENTS: Other non-critical elements which are present within the project area, and for which the IDT felt should be analyzed for potential impacts from the Proposed Action or Alternatives are as follows:

ACCESS AND REALTY AUTHORIZATIONS:

Affected Environment: Primary vehicular access to the BLM public lands within the project area is provided by the Federal, State, and county road systems. Secondary vehicular access is provided by BLM's road system and the various road rights-of-way granted to private entities.

BLM land use authorizations in the area consist of rights-of-way authorizations that include roads and highways, utility lines for both electrical and telephone service, fiber optic lines, fences, a reservoir and dam, water tanks and pipelines, and irrigation ditches.

Road rights-of-way include authorizations for four-wheel drive "two-track" roads that provide access to electrical transmission lines, small single-lane "driveways" for individual land owners, and the Federal, state and county road systems.

Power line rights-of-way range from authorizations for small kilovolt service lines for single or multiple residences; to large kilovolt double wood-pole transmission lines, to a very large steel structured transmission facility. Telephone and fiber optic rights-of-way include both aerial and buried systems.

The holder of a ditch constructed under the Act of July 26, 1866, as amended, has the right to maintain the facility without holding an official right-of-way. The Statute does not define the length, width or extent of these rights-of-way, and reasonable maintenance activities are to be allowed. Two ditches (whose rights are held by Grand River Ranch and The Colorado River Conservancy District) in the project area fall under this authority, but have been granted official rights-of-way. There may be other ditches that have not been recorded in this area whose holders would have to be given access for maintenance if the need arises.

There have been recent discussions with Grand County and the Grand County Rural Health Network, Inc. regarding a Recreation and Public Purposes (R&PP) patent for a proposed replacement hospital campus site; although a formal application has not yet been received in this office. This patent may include an 80 acre parcel located between the existing landfill site and incorporated Kremmling. This site presently receives extensive OHV and 4WD use. There are existing rights-of-way for ditches and access roads in the area that would also be subject to this patent.

Environmental Consequences:

Current Use (No Action) Alternative: This alternative would result in a total of approximately 230 miles of existing roads and trails remaining open to motorized vehicle travel. Use of these open routes would not be affected by this alternative. Uses authorized under existing right-of-way grants would also not be affected by this alternative. No new public easements across private lands to provide access to public lands are proposed in this alternative. Future right-of-way applications would be accepted and analyzed as they are at the present time.

Low Use Alternative: Under the Low Use Alternative there would be no impact to Realty Authorizations and Access. Some travel uses of existing routes would be changed under this alternative, affecting the type of access in some areas (i.e., motorized, non-motorized, or mechanized). No new public easements across private lands to provide access to public lands are proposed in this alternative. The uses authorized under existing right-of-way grants would not be affected by this alternative in the summer. Under the expanded winter seasonal closure, no holders of existing rights-of-way would have an official administrative designation and therefore would be required to coordinate with the Kremmling Field Office prior to any needed maintenance activities. Future right-of-way applications would be accepted and analyzed based on the high resource protection emphasis of the Low Use Alternative.

High Use Alternative**:** Under the High Use Alternative there would be no impact to Realty Authorizations and Access. Some travel uses of existing routes would be changed under this alternative, affecting the type of access in some areas (i.e., motorized, non-motorized, or mechanized). No new public easements across private lands to provide access to public lands are proposed in this alternative. The uses authorized under existing right-of-way grants would not be affected by this alternative in the summer. Under the expanded winter seasonal closure, no holders of existing rights-of-way would have an official administrative designation and therefore would be required to coordinate with the Kremmling Field Office prior to any needed maintenance activities. Future right-of-way applications would be accepted and analyzed based on the high user emphasis of the High Use Alternative.

Proposed Action: Under the Proposed Action there would be no impact to Realty Authorizations and Access. Some travel uses of existing routes would be changed under this alternative, affecting the type of access in some areas (i.e., motorized, non-motorized, or mechanized). No new public easements across private lands to provide access to public lands are proposed in this action. The uses authorized under existing right-of-way grants would not be affected. As defined in the administrative use definition, all right-of-way holders can access their facilities in an emergency for permitted activities. For those ROW access routes included in the expanded winter closure, the holder would be required to coordinate with the BLM prior to non-emergency use; however such coordination would not be required of some holders who have been granted administrative access based on frequency and type of use. These holders include Tri-State, WAPA, Howell, Bumgarner subdivision owners, Hill-Curry and Petrie. The Town of Kremmling's access road to the water tanks is marked as a snowmobile route for winter use. The Town would be able to access the tanks with other than a snowmobile for permitted activities if the need arose. Future right-of-way applications would be analyzed based on the road and trail management included in this action. If and when Grand County applies for an R&PP patent for the replacement of the hospital campus, a site specific analysis would be conducted to evaluate the environmental impacts from the proposed campus on this site. If and when a Decision Record were to be issued for this new project, the travel management would need to be modified to reflect the new use of this site (i.e. there is a high probability that the existing motorized use would be eliminated from this site). Since the existing site serves as a primary access to the high-use public lands immediately to the north, a new means of legal access would be pursued by the BLM.

Mitigation: Letters shall be sent to holders of rights-of-way who were not given a designation of administrative access, requiring them to coordinate with the Kremmling Field Office for any needed maintenance activities during the new winter seasonal closure.

FIRE/FUELS MANAGEMENT

Affected Environment: The Wolford Mountain Travel Management Project area was included in the development of the *Kremmling Field Office Fire Management Plan* (FMP), approved in December of 2002. The FMP identifies fire management areas (categories) through an analysis conducted by resource and fire specialists where fires can benefit resources or where suppression of fires would be the most appropriate response. In the FMP the Wolford Mountain Project area falls under 'Category B'. This is an area where wildland fire is not desired, where private lands

and urban interfaces, cultural resources, and lack of a natural seed bank could have a negative effect without mitigation. Potential human caused ignition sources include, but are not limited to, abandoned campfires, smoking, fireworks, and sparks from exhaust systems. Specific details related to fire management can be found in the FMP, available in the Kremmling Field Office.

Environmental Consequences:

Impacts Common to All Actions: Fuels Management projects would not be impacted by the Proposed Action or any of the Alternatives. Motorized access for administrative purposes, including fire suppression and fuels management, would be retained to an extent in all actions. Open and closed motorized routes would be used as fire control features (e.g., those natural and man made features that will hold the fire within a limited area) for prescribed fire projects when available. Roads and trails used as prescribed fire control features would be rehabilitated, or reclaimed if closed, upon project completion.

Current Use Alternative: This alternative would not affect fuels management for habitat improvement and/or wildland urban interface projects as identified in the FMP. Existing roads would be used as needed for wildland fire suppression activities. ATV and 4WD vehicle use over time would continue to increase, elevating the potential for human caused ignitions.

Low Use Alternative: The Low Use Alternative provides the highest potential reduction for human caused fire occurrence of all alternatives. This alternative would eliminate 115.0 miles of access as compared to the Current Use Alternative. Reducing motorized travel and access to more remote areas would reduce human caused risk factors; however, the elimination of access routes under this alternative would also reduce potential access for fire suppression resources.

High Use Alternative: This alternative decreases access compared to the Current Use Alternative by 16.6 miles, which would correspondingly decrease human-caused fire risk factors slightly. Fire suppression response would not be affected. ATV and 4WD vehicle use would likely increase, gradually elevating the potential for human caused ignitions. This alternative would retain the most access for fire suppression resources, adding slightly more access than currently available.

Proposed Action: Access would be reduced by 64.4 miles over the Current Use Alternative. This reduction in motorized access would reduce the potential for human-caused ignition from abandoned campfires, smoking, fireworks, exhaust systems and exhaust sparks; however access for fire suppression resources would not be reduced as much as in the Low Use Alternative.

Mitigation: Management objectives developed for routes designated in this project should include access considerations for fire suppression and fuels management projects where appropriate. Primary access routes should be identified and maintained to standards necessary to provide timely access for fire suppression resources.

GEOLOGY AND MINERALS

Affected environment: The project area consists of a well exposed, complex geologic area that has, and continues to be of scientific interest. Quaternary, Tertiary, Cretaceous and Precambrian rocks are well exposed, as are complex high angle and thrust faulting, and structural folding.

The central part of the area includes highlands that are the northern end of the Williams Fork Thrust Fault, with Red Mountain, Wolford Mountain, and an unnamed highland north of Gunsight Pass as 1.6 billion year old Precambrian rocks that are thrust westward over much younger Cretaceous sedimentary rocks.

Limited outcrops of pre-Cretaceous Mesozoic age rocks of the Jurassic Morrison and Sundance Formations occur near Wolford Mountain and northwest of Gunsight Pass. Extensive outcrops of Cretaceous rocks of the Dakota, Benton, Niobrara and Pierre Formations outcrop in a north-south belt from Kremmling to the north end of the project area, generally following and west of the Williams Fork Trust Fault trend. The extensive and 3-D exposures of the outcrops of the Pierre, Niobrara and Benton formations in this exposure belt make this area unique and of great interest to geologic studies. An extensive literature exists of the stratigraphy, biostratigraphy, paleontologic, sedimentologic and paleoenvironmental aspects of these rocks in the project area. Paleontologic and biostratigraphic zonation of the Pierre Formation in this area is based on invertebrate fossils (covered in more detail in the Paleontology section below) including the Kremmling Ammonite ACEC (covered in more detail in another section) that are so well exposed in the steep slopes and cliffs of the Pierre Formation outcrops in the project area. This has resulted in detailed understanding of the geologic history and paleoenvironment and correlations across northern Colorado during late Mesozoic time.

Tertiary badlands-like exposures of the poorly cemented Troublesome Formation throughout the eastern half of the project area are well known for revealing the post-Laramide history of Middle Park, and of the environment, climate and life in this era. Distinct, scientifically important and legally protected vertebrate fossils occur throughout the area in exposures of the Troublesome Formation.

Numerous Quaternary sediments of alluvium, terraces and pediments of sand and gravel exist, especially in the southern part of the project area. The Alluvium consists of boulders, cobles, pebbles and sand sized clasts of durable material (i.e.-quartzite, gneiss, granite) that has been transported by the floods and seasonal runoff of the Colorado River. The terraces are largely relic valley floor alluvial deposits, from the previous location of the river, prior to its downcutting to the current elevation. These terraces are now separated high and dry, from 20 feet to 500 feet above the current valley floor of the Colorado River, as much as 5 miles from its current course. Both the alluvium and the terraces are excellent sources of sand and gravel material for construction purposes.

The mineral history of the project area includes oil and gas, uranium, copper, and sand and gravel activity. No coal, geothermal, sodium, or other solid leasable federal minerals occur in the project area.

Oil and gas is the only federal leasable mineral in the area. Five oil and gas wells have been drilled within the project area, and eighteen in the townships that contain the area, with all being plugged and abandoned as dry holes. No drilling has occurred in the last 22 years in the project area. Several anticlinal folds and recumbent folds near strong faults exist, but little interest

remains for these potential areas, likely due to the poor results of previous drilling in the area. No oil and gas leases currently exist in the project area, and minimal activity is anticipated to occur in the near future.

Past interest in uranium potential resulted in considerable exploration work in the1950s – 1960s, but no activity has occurred in the last 30 years. Numerous prospects, mostly "dozer pits", from 20 -70 feet long, 5-10 feet deep, and the width of a bulldozer blade occur at the end of rough road segments throughout the eastern portion of the project area. Although some of these pre-permit routes have been used by 4WD and ATV users in the recent past, they no longer have a mineral resource importance.

Copper was explored for along fault traces, where circulating ground waters precipitated out azurite and malachite as colorful trace minerals. No commercial mining of copper ever occurred in this area, and only one prospect, a shallow adit in the SW1/4 of section 4, T 1 N, R 80 W., occurs in the project area. This adit now lies in the middle of a densely tracked motorcycle hill climbing area.

Considerable quantities of saleable sand and gravel resources occur in the Quaternary terraces and alluvium, mostly east of Kremmling, in the project area. The alluvium at the Colorado River is closed to mineral uses under the upper Colorado River SRMA plan, but federal mineral lands are open to sand and gravel sales outside of the river corridor. One federal sand and gravel pit exists northeast of Kremmling in a gravel terrace deposit, as a free use permit (FUP) with Grand County.

Environmental Consequences: For the Proposed Action and all alternatives, there would be minimal effect on federal mineral resources. The single existing area of mineral interest (the Grand County-permitted gravel pit) remains accessible on open roads in all of the alternatives. The abandoned copper prospect has long since become a hill climb "play" area by motorcyclists, although it would be closed in all alternatives except the Current Use Alternative.

Poorly cemented geologic outcrops (Cretaceous Pierre, Niobrara and Benton Formations and the Tertiary Troublesome Formation) that remain on open trails, roads and "high density" areas would likely see significant degradation, but only a few of these are critical for scientific purposes.

The single existing area of mineral interest (the Grand County-permitted gravel pit) remains accessible on open roads in all of the alternatives.

All outcrops of the Tertiary Troublesome Formation with known vertebrate fossils would be protected with closed and reclaimed roads, physical barriers and monitored for damage. Outcrops of the Tertiary Troublesome Formation which have not been studied, or undocumented vertebrate fossils, may be damaged and lost, as no additional inventory was made within the project area for these sites. Only outcrops with vertebrate sites that have been reported in USGS publications, the Denver Museum and University of Colorado museum files were reviewed in this analysis. A vertebrate site in alluvium would only be protected in the Low Use and Proposed Actions. This site would have no protection in the other alternatives, and would likely be degraded or lost unless the routes in that area are closed.

Mitigation: Invertebrate fossil and geologic resources at a site in the Wolford Mountain South Sub-Area would be degraded if left open. This site is not protected in any of the alternatives and route locations should be adjusted or barriers provided to safeguard this resource.

If significant Tertiary fossils are uncovered or discovered in the future, travel routes and access should be adjusted to safeguard these formations.

In all alternatives except the Current Use Alternative, low-impact initial exploration and "casual use" would need to be made on foot or horseback if not on open routes, but no point in the project area is beyond 1 mile from the nearest road or motorized trail in any of the alternatives. Any real level of mineral exploration or activity would require mechanized equipment and submittal of an exploration plan, a mining notice, or a plan of operations, all of which would require review and site-specific environmental analysis. Thus any new federal mineral actions would require additional environmental review, with road access for that particular project analyzed at that time.

HYDROLOGY AND WATER RIGHTS:

Affected Environment: The Project Area's affected hydrologic area is described in the Water Quality portion of this document. Additional information is also contained in the Watershed Analysis (Appendix 5) and the Soils and Wetlands portion of the environmental assessment. The Muddy Creek watershed, which contains most of the project area, is 202,100 acres. Public lands within the project area represent less than 16% of the watershed's acreage. On a watershed scale, the actions within the project area would not be measurable. On a more localized scale, especially to the adjacent surface waters, however, the acres of disturbance or of reclamation may be appreciable.

Water rights are held by the BLM on all known springs and water developments within the project area on public lands. There are private irrigation ditches, reservoirs, and ponds within the project area and adjacent to the area. Many of the streams have extensive private irrigation rights on them. Antelope Creek, which is less than 2 feet in width, has 32.8 cfs of absolute decreed irrigation ditches, and 25.0 cfs for a conditionally decreed ditch. In addition to this, there are eight decrees for reservoirs, with 536.27 acre-ft absolute and 475.83 acre-ft. conditional. Other absolute decreed ditch rights include 7 cfs on Dunning Creek, 242.35 cfs on Muddy Creek, 53.1 cfs on Pinto Creek, 25.25 cfs on Deer Creek, and 126.3 cfs on Red Dirt Creek. All of these creeks have additional water storage rights and conditional rights decreed on them. These stream diversions greatly alter the hydrology of the project area. Not only are average instream flows changed from natural conditions, but also the contributing watershed acreage, the vegetative cover, late summer flows, and the sediment carrying capacity. These are all factors that are outside of BLM management.

Table SRD-1
Existing Stream and Road Density Table

Drainage Name/ Watershed	Acres	Road Miles	BLM Road	Road density	BLM road density	Stream miles	stream density	Number of Stream/road	Crossings/
			miles	(mi./mi.2)	(mi./mi.2)		(mi./mi.^{2})	crossings	stream mile
Alkali Gulch	691.4	0.6	0.1	0.56	0.09	0.28	0.26	0	0
Antelope Creek	3612	19.2	16.2	3.4	1.9	1.74	0.20	5	2.87
Cow Gulch	2405	25.2	21.9	6.7	5.8	0.64	0.17	7	10.94
Deer Creek	225.5	0.4	0.4	1.1	1.1	0.26	0.74	0	0
Dunning Creek	599	3	3	3.2	3.2	0.39	0.4	2	5.13
Hay Gulch	2406	17.4	15.7	4.64	4.2	0.59	0.03	1	1.7
Horse Gulch	1665	18.6	17.1	7.15	6.6	0.40	0.15	4	10
Muddy Creek*						11.61 (4.57)		27 (3)	2.3 (0.7)
Pickering Gulch+	2013	11.4	11.4	3.63	3.63	1.10	0.35	3	2.7
Pinto Creek	1307	3.5	2.2	1.72	1.1	1.02	0.5	2	1.96
Red Dirt Creek*	1044	2.2	2.2	1.36	1.36	0.36	0.22	0	0
Starr Gulch	1758	9.1	7.0	3.31	2.6	0.66	0.24	0	0

Acreages and mileage are within the Travel Management Project Area only. Ephemeral distances are not included for any of the drainages.
*Muddy Creek and Red Dirt Acreages include all their tributary drainages. Therefore only 3 crossings (1 county, 2 private) are actually on Muddy Creek's mainstem.
+Pickering Gulch stream miles only include segments between seeps and springs.

Environment Consequences: For the Proposed Action and all alternatives, hydrologic impacts are covered in the water quality, soils, and wetlands sections. In managing the public lands within the Project Area, the BLM has been implementing actions that improve overall vegetative conditions. Improved ground cover, decreased soil erosion, and protected riparian/wetland areas all help the hydrologic processes remain in balance for an area. By decreasing the number of routes within perennial watersheds and the number of stream crossings, and stabilizing eroding roads, overall watershed health is improved under the Low Use Alternative and the Proposed Action.

Access to adjudicated water rights was recognized as a necessary administrative access need for the Proposed Action and all alternatives. The BLM attempted to identify all known water sources and ditch access routes during the designation process. If any private water right is impacted by the selected alternative, then administrative access would need to be provided.

Table SC-1
Route Designations for Stream Crossings in Project Area

	County, Private, and Federal Routes	Open with Mitigation	Motorcycle	ATV	Administrative Use Only	Closed
Low Use Alternative	9	1	2	0	7	8
High Use Alternative	9	11	3	1	2	1
Proposed Alternative	9	5	2*	1	4	6

Table SRD-2
Stream and Road Densities in Project Area in Low Use Alternative

Drainage Name/ Watershed	Acres	Road Miles	BLM Road	Road density	BLM road density	Stream miles	stream density	Number of Stream/road	Crossings/
			miles	(mi./mi.2)	(mi./mi.2)		(mi./mi.^{2})	crossings	stream mile
Alkali Gulch	691.4	0.5	0	0.5	0	0.28	0.26	0	0
Antelope Creek	3612	10.1	7.1	1.8	1.3	1.74	0.31	5	2.87
Cow Gulch	2405	9.9	6.6	2.6	1.8	0.64	0.17	1	1.56
Deer Creek	225.5	0.4	0.4	1.1	1.1	0.26	0.74	0	0
Dunning Creek	599	2.0	2.0	2.1	2.1	0.39	0.4	2	5.13
Hay Gulch	2406	7.9	6.2	2.1	1.6	0.59	0.03	1	1.69
Horse Gulch	1665	11.1	9.6	4.3	3.7	0.40	0.15	2	5
Muddy Creek						11.61 (4.57)		(3)	(0.66)
Pickering Gulch	2013	7.2	7.2	1.9	1.9	1.10	0.35	2	1.82
Pinto Creek	1307	3.2	1.9	1.5	0.9	1.02	0.5	2	1.96
Red Dirt Creek	1044	0.4	0.4	0.2	0.2	0.36	0.22	0	0
Starr Gulch	1758	4.6	2.5	1.7	0.9	0.66	0.24	0	0

Administrative Use only crossings: 2 on Antelope Creek, 2 on Pinto Creek, 2 on Pickering Gulch, and 1 on Dunning. County or private: 1 on Horse Gulch, 1 on Cow Gulch, 1 on Hay Gulch, and 3 on Antelope Creek.

Table SRD-3
Stream and Road Densities in Project Area in High Use Alternative

Drainage Name/ Watershed	Acres	Road Miles	BLM Road	Road density	BLM road density	Stream miles	stream density	Number of Stream/road	Crossings/
			miles	(mi./mi.2)	(mi./mi.2)		(mi./mi.^{2})	crossings	stream mile
Alkali Gulch	691.4	0.6	0.1	0.6	0.1	0.28	0.26	0	0
Antelope Creek	3612	16.4	13.4	2.9	2.4	1.74	0.20	5	2.87
Cow Gulch	2405	22.3	19.0	5.9	5.1	0.64	0.17	6	9.38
Deer Creek	225.5	0.4	0.4	1.1	1.1	0.26	0.74	0	0
Dunning Creek	599	3.0	3.0	3.2	3.2	0.39	0.4	2	5.13
Hay Gulch	2406	15.3	13.6	4.1	3.6	0.59	0.03	1	1.69
Horse Gulch	1665	18	16.5	6.9	6.3	0.40	0.15	4	10
Muddy Creek*						11.61 (4.57)		26 (3)	2.24 (0.66)
Pickering Gulch	2013	12.6	12.6	4	4	1.10	0.35	3	2.73
Pinto Creek	1307	3.5	2.2	1.72	1.1	1.02	0.5	2	1.96
Red Dirt Creek*	1044	0.7	0.7	0.4	0.4	0.36	0.22	0	0
Starr Gulch	1758	4.8	2.7	1.7	1	0.66	0.24	0	0

Table SRD-4
Stream and Road Densities in Project Area in Proposed Action

Watershed	Acres	Road Miles	BLM Road	Road density	BLM road density	Stream miles	stream density	Number of Stream/road	Crossings/
			miles	(mi./mi.2)	(mi./mi.2)		(mi./mi.^{2})	crossings	stream mile
Alkali Gulch	691.4	0.6	0.1	0.6	0.1	0.28	0.26	0	0
Antelope Creek	3612	17.5	14.5	3.1	2.6	1.74	0.20	5	2.87
Cow Gulch	2405	16.4	13.1	4.4	3.5	0.64	0.17	2	3.13
Deer Creek	225.5	0.4	0.4	1.1	1.1	0.26	0.74	0	0
Dunning Creek	599	3	3	3.2	3.2	0.39	0.4	2	5.13
Hay Gulch	2406	11.6	9.9	3.1	2.6	0.59	0.03	1	1.69
Horse Gulch	1665	15.2	13.7	5.8	5.3	0.40	0.15	2	5
Muddy Creek*						11.61 (4.57)		20 (3)	1.72 (0.66)
Pickering Gulch+	2013	8.9	8.9	2.8	2.8	1.10	0.35	3	2.73
Pinto Creek	1307	3.2	1.9	1.6	0.9	1.02	0.5	2	1.96
Red Dirt Creek*	1044	0.7	0.7	0.4	0.4	0.36	0.22	0	0
Starr Gulch	1758	4.6	2.5	1.7	0.9	0.66	0.24	0	0

LAW ENFORCEMENT

Affected Environment: Problems with unauthorized or illegal OHV use on Public Lands administered by the Kremmling Field Office are numerous and growing. The Law Enforcement program currently focuses on education, compliance checks, and issuing written warnings and violation notices.

Under the BLM'S current OHV regulations, motorized travel is permitted on all existing roads and trails and cross country travel is acceptable unless resource damage is occurring as a result of this use. In some areas where damage has occurred or where special management areas exist, motorized access has been restricted by activity plans or emergency orders. Roads are assumed open to use by OHV'S unless posted as closed.

The current OHV regulations are difficult for the BLM to enforce due to not having designated routes. Although the current regulations discourage driving off existing roads and trails, many unauthorized User Created travel routes have been created over the years that users now regard as existing motorized roads or trails. The creation of such roads and trails often results in damage to Public Lands, causes adverse impacts to other resources, or creates conflicts with other users. Signs which are posted on user created routes, prohibiting motorized use where damage has occurred, do not stay up for very long.

Environmental Consequences/ Mitigation:

Impacts Common to All Action Alternatives: The primary benefit for law enforcement in switching to a designated route system is that Rangers, and the public, would know the routes that are available and their designated uses. This familiarity would assist Rangers in enforcing user compliance during the winter and summer seasons, and in establishing criteria to assist in court proceedings. Problems associated with illegal OHV use include the need for additional oversight, law enforcement and/or non-law enforcement, and the installation and replacement of signs, kiosks, and vehicle barriers.

Current Use Alternatives: Law Enforcement personnel would continue to operate under current travel management regulations which allow use of existing roads and trails with no limitations. The current use alternative would continue to limit law enforcement's ability to effectively enforce user created routes, allowing the continued proliferation of these routes.

Low Use Alternative: The Low Use Alternative would implement a designated route travel management system that would improve the ability of law enforcement personnel to enforce OHV restrictions. This alternative would, however, require the most law enforcement presence, since the number of road and trails that are designated for OHV use would be substantially reduced. This could lead to overcrowding and increased user conflicts in some areas, increased violations of OHV use on non-motorized routes, and increased attempts to establish illegal routes.

High Use Alternative: The High Use Alternative would implement a designated route travel management system that would improve the ability of law enforcement personnel to enforce OHV restrictions. The High Use Alternative would initially create a greater need for compliance and law enforcement actions but this would improve over time as users become familiar with the

new travel management system. Since more routes would be available for OHV use, in the long term, a lower level of law enforcement presence should be needed.

Proposed Action: The Proposed Action would implement a designated route travel management system that would improve the ability of law enforcement personnel to enforce OHV restrictions. The Proposed Action would initially create a greater need for compliance and law enforcement actions but this would improve over time as users become familiar with the new travel management system.

NOISE:

Affected Environment: Sound is defined as "the sensation perceived by the sense of hearing" and is measured in decibels (dB), a scale of the relative loudness or intensity of sound. Several different scales are used to measure decibels with the 'A' scale used for testing as it most closely approximates the ranges of human hearing. Measurements in the 'A' scale are commonly shown as 'dB(A)'. Noise is generally defined as an unwanted or undesired sound, often unpleasant in quality, intensity or repetition. Sound levels can be scientifically measured using a decibel meter, but noise is a more subjective matter. Even if the measurable sound level created by an activity or object is moderate to low, some people will consider it a noise based upon the source of the sound. Some people find the sound of a snowmobile or motorcycle engine to be objectionable while others find certain types of music to be 'noise'.

The setting where the sound is heard is often the major factor in deciding whether it is acceptable or objectionable. As the environmental setting moves from urban toward primitive, the amount of sound that is acceptable changes and the acceptability of the source of the sound changes. In an urban area we expect to hear traffic sounds, horns, lawnmowers, shouting, radios, boomboxes, etc., while in a more primitive setting these sounds are less acceptable.

The upper portions of Wolford Mountain were identified by some members of the public as an area where they would prefer to have quiet recreation opportunities for wildlife viewing, hiking and enjoying the vistas from the BLM ridges near the top of the mountain. The actual peak of the mountain is private property. Currently only two routes exist in this area, a motorcycle trail and the access road to the communications site at the peak of the mountain. The motorcycle trail over the top of Wolford Mountain receives very little use during the spring due to the snow that remains in the timber on the north facing slopes. The access road to the communications site is limited to administrative use for operations and maintenance and receives only sporadic motorized use. This would allow for hiking and wildlife viewing opportunities to occur in the spring before May 15, after which many of the quiet areas at higher elevations would be snow-free. During the summer, opportunities still exist for quiet recreation times on weekdays, especially in the early mornings. Even with the occasional motorcycle during the summer, the area can provide a place of quiet reflection and a sense of solitude.

Quiet recreation use is currently available in several areas very near to Wolford Mountain. The Troublesome Wilderness Study Area and the adjoining US Forest Service Troublesome roadless area located to the northeast of the project area are closed to motorized use and provide a more primitive recreation experience. Junction Butte, immediately south of Kremmling, is managed by the CDOW and is limited to non-motorized use, except during the fall big game hunting

seasons when a limited number of designated routes are available for hunting access. This peak provides hiking and viewing opportunities similar to Wolford Mountain and is easier to access. The USFS lands on Gore Pass to the west are limited to designated routes and there are several large areas that have few, if any, designated routes open to motorized use. These areas provide additional non-motorized and quiet recreation opportunities within a ½ hour drive of Kremmling.

Sound levels and noise also impact important wildlife species, especially big game and birds. The current winter snowmobile limitation was placed in effect to provide large areas where the wintering big game would be less affected by noise and movement from snowmobiles. This allows the animals to feel more secure while browsing and resting during the difficult winter conditions and reduces the stress and exertion that may result from fleeing approaching vehicles.

Ambient or normal sound levels of 35-40 dB(A) in primitive settings; 40-50 dB(A) in rural or semi-primitive settings; and 50-75 dB(A) in urban settings can be expected. Exposure over time to continuous levels in excess of 90 dB(A) can cause hearing damage.

OHV sound levels are most commonly measured with one of two methods, moving or stationary. The 20 inch stationary test involves using a decibel meter located 20 inches from the end of the tailpipe of a motorcycle or ATV at an angle of 45 degrees from the discharge point. The moving test uses a decibel meter located 50 feet from a point where the vehicle drives past. Current state law for the maximum OHV sound levels is 84 dB(A) with the 50 foot test or about 99 dB(A) using the 20 inch test.

Most ATVs and motorcycles sold for public land use meet the minimum sound standards for those vehicles and have a muffler marked with the USDA approved spark arrestor. The exceptions are mufflers that have been modified, the packing material has deteriorated, or are strictly intended for closed-course or competitive use, such as motocross models. OHVs that do not meet the sound limit or do not have a USDA approved spark arrestor are not legal to ride on public lands, except during a permitted competitive event.

The Motorcycle Industry Council and the Specialty Vehicle Industry Association include the major manufacturers of motorcycles and ATVs. Both of these organizations recommend 96 dB(A) with the 20 inch test and are manufacturing to meet this lower level. Manufacturers and after market suppliers have developed replacement mufflers and packing materials that can be used with existing mufflers to meet this standard.

Environmental Impacts:

Current Use: For those preferring quiet recreation and non-motorized activities in semi-primitive settings, the area would continue to provide minimal opportunities. The sight and sounds of motorized vehicles may not meet their desired experience and they may feel they need to go elsewhere for that experience. For those who accept or can tolerate the sounds of motorized vehicles, the area would continue to provide a variety of opportunities with moderate or occasional vehicle sound.

The sounds of motorized vehicles may cause wildlife to move to quieter or lower use areas for security. During the winter this stress and movement may cause big game animals to expend additional energy and affect survival rates. The current winter limitation on snowmobiles would

help minimize the impacts for areas south of CR 25; however, noise could continue to cause wildlife to move around in the area north of CR 25 due to the number of routes open in the winter.

Low Use Alternative: The impacts of this alternative would be the lowest of all the alternatives since fewer routes would be available for motorized recreation. There would be large areas with very few designated motorized routes that would provide quiet recreation opportunities. The only route with motorized use on the top of Wolford Mountain would be the communications site access road and it is expected to receive minimal use. Wildlife would also have more area with minimal motorized use due to the expansion of the winter limitation area and the inclusion of all motorized vehicles in the limitation.

High Use Alternative: During the winter, the impacts would be lower than the Current Use situation due to the doubling in size of the winter limitation area, closing about 34 additional miles of routes, and the inclusion of all motorized vehicles in the limitation. During the rest of the year, the impacts would be slightly lower than the Current Use Alternative with about 21 miles of routes closed to motorized use and 19 miles limited to Administrative motorized access. For those preferring quiet recreation and non-motorized activities in semi-primitive settings, the area would provide limited opportunities.

Proposed Action: The impacts of the Proposed Action would fall between the High Use and the Low Use Alternatives. The area near the top of Wolford Mountain would provide quiet recreation opportunities during the spring. The numerous routes that are either closed or limited to administrative use will provide quiet recreation opportunities. Wildlife would also have more area with minimal motorized use due to the expansion of the winter limitation area and the inclusion of all motorized vehicles in the limitation.

Mitigation:
To minimize sound conflicts and issues, the maximum sound level allowable for OHVs in the project area should be reduced to 96 dB(A) with the 20 inch test.

PALEONTOLOGY

Affected Environment: The project area contains considerable paleontologic resources, with both vertebrate and invertebrate resources of scientific value and importance. Vertebrate fossils resources are legally protected under the *Antiquities Act of 1906*, from damage and collection without permit.

The Kremmling Resource Area was included in an inventory which was reported as *The Paleontologic Resources of Northwest Colorado; a Regional Paleontologic Inventory*, under contract for the BLM in 1989. This report was basically a file and bibliographic review of the University of Colorado Museum, Denver Museum of Natural History and USGS collections and publications. There may be other collections and studies of the paleontology in the project area that were not included in this inventory. No additional studies for paleontologic potential were made for this plan. Outcrops that not been studied for, or with undocumented vertebrate fossils, may be damaged and lost, as no additional inventory was made within the project area for these sites.

The Tertiary Troublesome Formation contains approximately forty known outcrops with significant vertebrate fossil resources which occur within the project area. Nine of these sites lie within 1/8 mile of identified roads and routes. Of these nine sites, five lie close enough to the routes that damage is either occurring, or likely to occur to them if travel is allowed to continue at that point. These fossils are protected under the 1906 Antiquities Act, and require physical protection from damage or collection.

The Cretaceous Benton, Pierre, and Niobrara Formations contain three vertebrate sites, and over two hundred significant invertebrate sites which occur within the project area. The majority of the Kremmling Ammonite site is included within the area as well. It is protected as an ACEC, and is discussed further in that section.

The invertebrate sites are generally for gastropods, ammonites (including belemnites) and benthic fauna, many of which are important in biostratigraphy, and regional correlations of these strata. These same fossils commonly allow for detailed environmental and biologic reconstructions of the geologic past in this area. The few vertebrate fossils from the Cretaceous rocks include mosasaur and fish remains. These fossils are protected under the 1906 Antiquities Act, and require physical protection from damage or collection.

Environmental Consequences A known vertebrate site in alluvium would only be protected in the Low Use and Proposed Actions. This site would have no protection in the other alternatives, and would likely be degraded or lost unless the routes in that area are closed. Outcrops that have not been studied for, or with undocumented vertebrate fossils, may be damaged and lost, as no additional inventory was made within the project area for these sites. Only outcrops with vertebrate sites that have been reported in USGS publications, Denver museum and University of Colorado museum files were reviewed in this analysis.

Invertebrate fossils can only be protected if rare, or of high economic or scientific values. Although numerous (perhaps half of the 200+ localities) Cretaceous invertebrate localities within the project area qualify under this definition, only those sites seeing considerable damage and erosion from use are judged to be critical enough to be protected under this plan. Two such sites are located within the project area. These sites would likely see degradation if left open. One site is not protected in any of the alternatives. The second site is protected in the Low Use and Proposed Actions only.

Mitigation:

Mitigations Common to All Action Alternatives: If significant fossils are uncovered or discovered in the future, travel routes and access should be adjusted accordingly to safeguard these exposures.

One known invertebrate site is not protected in the Proposed Action or any of the alternatives. Site monitoring and closure or re-location of routes as necessary to protect these sites should be required in these alternatives.

A vertebrate site in alluvium would not be protected in the Current Use or High Use Alternatives, and would likely be degraded or lost unless the routes in that area are closed.

Other vertebrate fossils in the Tertiary Troublesome Formation are either being damaged, or are likely to be, at five locations in the project area. The Current Use, Proposed Action, and High Use actions would continue damaging these sites that legally require protection. Where the routes lie immediately adjacent to these vertebrate sites, physical barriers such as fences need to be constructed between the route and the resource to protect the sites. These barriers should be constructed in conjunction with project implementation at these locations. The routes should be closed and/or relocated where they actually overlie and damage these sites for adequate protection.

RANGE MANAGEMENT

Affected Environment: There are 12 livestock grazing permits and 17 livestock grazing allotments within the project area. BLM livestock grazing permits authorize a specific rancher to graze a specific number of livestock for a set grazing period on a BLM allotment. All of the allotments have been assessed during the livestock grazing permit renewal process for compliance with the Standards for Public Land Health in Colorado (Standards). Appropriate actions have been implemented on those allotments that failed the vegetation portion of Standard #3. See the VEGETATION section of this document for further information on the Standards.

All of the allotments within the project area are or will be included in rotation grazing systems. Most of the livestock grazing systems were implemented during the livestock grazing permit renewal process. The objective of rotation grazing systems is to improve the range condition and meet the requirements set forth in the Standards.

Range improvements (fences, water developments, etc.) have been developed on BLM public lands to aid in livestock distribution and control. These improvements require maintenance and repair.

Vandalism has been an ongoing problem for the livestock grazing permittees, especially in the southern end of the project area where recreational use is the highest. Fences and water developments such as water troughs, wells, generators, pumps, and pipelines have been damaged by vandals. The permittees fear that if the recreational use continues to increase, the damage caused by vandalism would also continue to increase. Gates that are used to control cattle are frequently left open and require repeated inspections to keep the cattle in the proper pasture. The permittees can spend many hours each year herding cattle back to their scheduled pasture because someone has left a gate open.

Environmental Consequences:

Impacts Common to the Proposed Action and All Alternatives: There would be no change to the range management within the project area with implementation of any of the alternatives including the Proposed Action and the Current Use Alternative. The number of AUMs (animal unit months), season of use, and number and kind of livestock would be unchanged for all alternatives. Although some small adjustments may need to be made due to closed roads and areas of high recreational use, the overall range management of the project area would remain unchanged.

The permittees have, in the past, had unlimited access to their allotments to manage and operate range improvements. Implementation of the Proposed Action or alternatives, except the Current Use Alternative, would close roads throughout the project area. These roads would be closed to the general public but may still be used by the permittees under an "administrative use only" classification. These roads could be used by the permittees for completion of their authorized ranching operation and maintenance activities. Permittees would also be allowed access along fence lines for fence maintenance and gate management.

Vandalism and open gates would continue to be a concern of the permittees whichever alternative is implemented. The chance of vandalism and gates being left open is always going to be a problem where livestock and recreationists use the same area in a multiple use scenario. However, the more roads that are closed or designated as "administrative use only", the less the chance of conflict between people and livestock.

Winter closure of the project area to motorized vehicles, except on authorized snowmobile routes, would have a small positive impact on the range management of the area. Reduced motorized traffic would reduce the chance of vandalism to water developments and fences.

Mitigation:

All livestock grazing permittees would be required to follow the rotation grazing systems that have been or will be implemented during the permit renewal process.

Permittees would be allowed access along fence lines for fence maintenance and gate management.

Use "administrative use only" roads only when doing official ranch work.

A vegetation monitoring program was implemented within the Kremmling Resource Management Plan in December 1984. This monitoring would continue to be followed with implementation of the Wolford Travel Management Plan.

Livestock grazing permittees would be required to report to the BLM the size and location of any new weed infestations that they discover.

Gates will be signed to inform the public of when the gates need to be closed following pass-through for livestock management purposes.

Education, information, and volunteer assistance, together with law enforcement patrols, should be developed and scheduled to reduce the frequency of vandalism to existing range improvements.

Permittees shall use "administrative use only" roads only when doing official ranch work.

RECREATION:

Affected Environment: The Wolford Mountain area has been used for intensive motorized recreation for many years. The 1984 RMP refers to the area as "Kremmling's back yard OHV playground" with numerous open roads and trails. The area provides opportunities for use by 4x4s, ATVs, and dirt bikes/trail bikes in both roaded and semi-primitive motorized settings. The 1988 OHV plan recognized the easy access from Kremmling and increasing use levels. This plan recommended a limitation to designated routes for all of the existing routes; however it deferred closure of these routes until a complete inventory and analysis could be completed.

Four wheel drive vehicles, ATVs and motorcycles are increasing in popularity throughout the country. Statewide registrations of ATVs and motorcycles have increased dramatically since the registration program began in the early 1990s and this trend shows little sign of changing. Due to the increased levels of use over the years, many of the routes in the project area that were used relatively infrequently are now receiving higher levels of use. There have also been additional trails and extensions of existing routes created over the years. There are two high-density motorcycle trail areas, one at the southwest corner of the cliffs where several trails run up the steep ridge crests to the top, and another area near the Muddy Creek fishing access. The cliff area provides a technical and challenging opportunity to climb the long, steep ridge crests. The area near the fishing access is small and provides difficult but short hill climbs. A high density 'play area' exists north of the landfill with numerous short climbs and loops that are often used by beginner to intermediate motorcycle and ATV riders to improve their skills. It also functions as an area where parents can instruct and watch their kids ride.

In the vicinity of Wolford Mountain, an existing motorcycle trail which traverses the summit of the mountain receives very little use during the spring due to the snow that remains in the timber on the north facing slopes. An access road to a communications site on the summit is limited to administrative use for operations and maintenance, and receives only occasional motorized use by the permittee. The summit area provides hiking and wildlife viewing opportunities in the spring. During the summer, opportunities still exist for quiet recreation times on weekdays, especially in the early mornings.

Non-motorized activities in the area include hiking, jogging, mountain biking and horseback riding. Hiking and jogging occur on many of the routes close to Kremmling, primarily on State land. Some spring and early summer hiking occurs on Wolford Mountain, to take advantage of the vistas from the top and wildflower viewing. The mountain usually opens up earlier than surrounding higher elevation USFS lands that offer similar opportunities. Mountain bike use occurs on many routes in the area. A mountain bike route map for western Grand County, which was developed by a USFS employee in the early 1990s, recommended several of the two track routes for mountain biking and provided detailed trail information. The routes provide a variety of loop rides with varying distances and challenge levels, however mountain bike use presently remains low in the Wolford Mountain area. There has been some interest in developing a route between Kremmling and the Wolford Mountain Reservoir area and there is a local mountain bike retail business in Kremmling. With more information and education about area routes, mountain bike use could grow.

Horseback riding also occurs in the project area, primarily by local riders. Some riding occurs on routes shared with motorized vehicles but the many game and cattle trails afford the best riding opportunities.

Big game hunting in the fall for antelope, mule deer and elk is very popular throughout the area. This is also one of the busiest times for OHV use as ATVs have become extremely popular with hunters. Most of the camping use in the area is associated with the hunting activity. One of the major issues during the hunting seasons is the cross country motorized travel that occurs for scouting and game retrieval. A single trip across the vegetation generally leaves very little evidence of vegetation damage; however, multiple vehicles in a group or multiple trips by a single vehicle can result in creation of a visible route on the ground surface. Hunters or other riders may view this as an existing route if they are unfamiliar with the area and follow it until they realize it has little recreational or hunting value.

Driving vehicles off existing routes to park for camping, picnicking, or hunting use has created additional disturbance and new spur routes.

The lower elevations of the project area provide an opportunity for early season riding. The increased limitations and closures on nearby US Forest Service lands may have pushed some OHV use to the Wolford Mountain area where there are fewer limitations and more open routes.

An area roughly ½ to ¾ mile in radius from the top of Wolford Mountain is classified in the Recreation Opportunity Spectrum (ROS) as Semi-Primitive Motorized. The area has a moderate probability of experiencing solitude, a sense of closeness to nature in a predominantly natural appearing environment. The management alterations are generally small in size and dispersed, travel is primarily by 4-wheel drive and OHVs on mostly primitive roads and most of the area is more than ½ mile from better than primitive roads. The feel of being in a semi-primitive area is enhanced by the topography and timber stands that reduce the sights and sounds of other activities.

The rest of the project area is classified as Roaded Natural in the ROS. There is a moderate probability of contacts with others in a mostly natural setting. The management alterations (vegetative treatments, structures, range improvements, roads and trails, etc.) are noticeable and travel is often by conventional motorized vehicles (may include sedans, trailers and RVs) on better than 'primitive' roads with some designed roads.

BLM has developed a number of guidelines and directives to better manage recreational use on public lands. The BLM's *National Management Strategy for Motorized Off-Highway Vehicle Use on Public Lands* provides goals and actions to improve management of OHVs on public lands and this travel plan follows those guidelines. Colorado BLM has also developed the *Recreation Management Guidelines to Meet Public Land Health Standards on BLM Lands in Colorado* which provides direction on managing recreational uses to assure that the overall health of the public lands is maintained.

Some important components of a successful route system are: education concerning land use ethics, easy to understand maps and brochures, consistent signage on routes, developing partnerships with user groups and volunteers, providing on-the-ground presence, monitoring of recreational uses, and developing an adaptive management policy that will ensure that the

Recreation Management Guidelines and the Standards for Public Land Health are achieved and maintained.

The Colorado Natural Resource Group (CNRG) has developed a uniform travel management sign standard for use on all public lands in Colorado and the implementation phase of this plan would use that standard. This standard provides for consistent travel management signing and information on BLM, USFS and State lands, to reduce the confusion that currently exists with differing sign sizes and shapes, symbols and language.

In assessing the recreational value of the routes, it became apparent that some of the parallel routes, spur routes leading to private lands, and spur routes leading to range improvements were of limited recreation value and could be closed or limited to administrative use with minimal impacts to recreation users. These limitations would enhance the protection of sensitive environmental or cultural resources while providing additional non-motorized opportunities. Some parallel routes that provided differing recreational experiences because of technical challenge or the type of vehicle used were left available for motorized use. Spur routes to overlooks or campsites were generally considered to have a higher recreational value than those going to range improvements. Utilizing loop routes and providing a variety of challenge levels for different types of vehicles greatly increases the recreation benefits and user satisfaction.

Environmental Consequences:

Current Use Alternative: This alternative would allow for a continuation of use by OHVs on existing routes in the area with minimal restrictions. Numerous loop riding opportunities and dispersed camping sites exist throughout the project area. About 98% of the existing miles of routes in the area are currently open to motorized recreation. Refer to Table 3 for miles of routes available by type of use. This alternative would likely continue the "upsizing" of routes from single track to ATV to full sized vehicles. This trend reduces the quality opportunities for those who hike, ride horses, mountain bikes, ride motorcycles and ATVs as more of their trails become used by larger vehicles. It also leads to additional vegetation loss and increased potential for erosion. Overall this alternative is not favored due to the reduced recreational benefits for some users and increased resource impacts. The high density play areas would remain open to motorcycle and ATV use. About 96 miles of BLM routes outside the current winter snowmobile limitation area would remain open for snowmobile use. The county roads would remain open to all uses during the winter.

Low Use Alternative: This alternative has the highest reduction in the number of routes available for motorized recreation. About 82% of the miles available for motorized recreation in the current situation would be either closed or limited to administrative use, thereby substantially reducing the opportunities for motorized recreation. Refer to Table 3 for miles of routes available by type of use. Non motorized users would find larger areas available without the sights and sounds of motorized vehicles. The few routes remaining open to motorized use would have greatly increased use and higher levels of conflict between users. This alternative would eliminate the "upsizing" of routes from single track to ATV to full sized vehicles as the designations would limit the size and type of vehicles allowed on a route. The number of miles limited to ATVs and motorcycles would be much lower than in the Current Use Alternative, and would result in decreased opportunities for ATV and motorcycle users. The high density play area north of the landfill would be smaller than the current size and designated primarily for use

by ATVs and motorcycles. The play area would be limited to existing routes for ATVs and motorcycles, and full sized vehicles would be limited to designated routes to pass through the area. The motorcycle area at the southwest corner of the cliffs would remain open and the motorcycle area near the fishing access would be closed to motorized use. There is also the potential safety issue of increased accidents due to the high volume of traffic on a relatively small number of routes. There may be an increase in off-route travel and vandalism due to the overcrowding and higher levels of conflict. Access for hunting and game retrieval would be reduced and could decrease the hunter success and satisfaction. Winter use by snowmobiles would be reduced to about 1.5 miles of BLM routes and 11 miles of County Roads.

High Use Alternative: This alternative would provide the greatest opportunities for motorized recreation. There would be a reduction of about 17% in the number of available miles for motorized recreation over the Current Use Alternative. Refer to Table 3 for miles of routes available by type of use. This alternative would not allow for "upsizing" of routes from single track to ATV to full sized vehicles as the designations would limit the size and type of vehicles allowed on a route. The miles of routes limited to ATV and motorcycles would be lower than the current use situation. The limitations would provide for fewer pure riding opportunities for smaller vehicles, such as motorcycles and ATVs, as this alternative leaves more miles in the *Open-Limited* category where the smaller vehicles share the route with full sized vehicles. Loop rides and many of the dead-end routes would remain available for motorized recreation. The high density play area north of the landfill would remain at its current size and be primarily for use by ATVs and motorcycles. The play area would be limited to existing routes for ATVs and motorcycles and full sized vehicles would be limited to designated routes to pass through the area. The motorcycle areas at the southwest corner of the cliffs and near the fishing access would remain open to motorcycle use. Winter use by snowmobiles would be reduced to about 62 miles of BLM routes. The county roads would remain open to all uses during the winter.

Proposed Action: This alternative provides the best mix of designations to provide opportunities for all forms of motorized recreation and continues to allow foot and horseback use of all types of routes. The number of miles available for motorized recreation is lower than the current situation by about 41%; however many of the routes that would be closed or limited for administrative use are dead-ends, fenceline or pipelines, or in poor condition. Refer to Table 3 for miles of routes available by type of use. Routes limited to ATV and motorcycle use would provide for loop rides of varying distances though portions of the loops are shared with full sized vehicles. A short ATV segment is proposed to be constructed to create a loop ride. A reroute of the motorcycle trail over Wolford Mountain is proposed to avoid private lands. A high density play area north of the landfill would be primarily for use by ATVs and motorcycles. The play area would be limited to existing routes for ATVs and motorcycles, and full sized vehicles would be limited to designated routes to pass through the area. The motorcycle areas at the southwest corner of the cliffs and near the fishing access would be closed to motorized use. No alternative locations for hill climbs have been identified. This alternative allows for continued access for hunting though access may be limited to ATVs on some routes. Many of the existing camping and picnicking sites would remain open and accessible. The designation of an area to develop a technical jeep route east of CR 224 would provide an opportunity to have a designed and challenging route in a managed setting. Winter use by snowmobiles would be reduced to about 7.2 miles of BLM routes and 26 miles of County Roads.

Mitigation:

The motorcycle trail over Wolford Mountain should have a seasonal limitation to allow motorcycle use after May 15 annually to allow for hiking and wildlife viewing opportunities prior to May 15. The trail should remain open for use through December 15 when the winter limitation begins. It would also provide adequate time for the snow to melt and the trail to dry in average moisture years. The trail would be signed at each end indicating this seasonal limitation. This trail should be monitored twice annually for use and condition, during the middle of the summer use period, and at the end of the use period prior to the first rifle hunting season.

Driving vehicles off a designated road to park for camping, picnicking, or hunting use should be limited to a maximum of 50 feet from the centerline of the road. No motorized travel beyond 50 feet of a designated route should be allowed for game retrieval. This limitation is due to the cultural clearances being conducted to a standard width of 50 feet on each side of centerline.

SOCIO-ECONOMIC

Affected Environment: The project area is located in western Grand County, immediately north of the Town of Kremmling. Grand County is 1,847 square miles in size. An estimated 76 % of Grand County's land base is public lands. The project area is approximately 42,600 acres or about 4% of the total county area.

Population: Grand County's population in 1990 was estimated at 7,966 (U.S. Census Bureau). By the 2000 census, the population had grown by 56.2% to 12,442. From April 1, 2000 to July 1, 2003 the population grew 5.9% to 13,173. Table P1 below displays population figures for Colorado, Grand County and Kremmling for 1970, 1990 and 2000. Since 1970, the population in Grand County has grown faster than the state and faster than the nation (Sonoran Institute).

Table P1

Area	1970	1990	2000	1990-2000 % Change
Colorado	2,207,259	3,294,394	4,301,261	30.6
Grand County	4,107	7,966	12,442	56.2
Kremmling	1,205	1,166	1,578	35.3

Of the 12,442 persons listed in the 2000 census, the two largest ethnic groups were comprised of white (93.0%) and Hispanic (4.4%) origin. Colorado's makeup for these two ethnic groups during the same time period was 74.5% and 17.1% respectively. Per capita income of Grand County residents reported in the 2000 census was $25,195, compared to $24,049 for Colorado residents as a whole (U.S. Census Bureau). This represents a 7.7% increase over the per capita income figure for 1990 of $22,466 (Sonoran Institute).

Employment and Economy: Between 1970 and 2000, 8,174 new jobs were created in Grand County. The Services and Professional employment sector accounted for 6,123 of these new jobs, and construction accounted for 1,099 new jobs. The Government sector accounted for 806 new jobs, with the majority of growth occurring in the state and local government (Sonoran

Institute). Table ES1 below illustrates the changes in employment sectors from 1970 to 2000. The table illustrates a dramatic change from ranching and forest product related jobs to a more diverse economy based on services and construction.

Table ES1

Employment Sector	**1970 %**	**2000 %**
Services and Professional	57	72
Government	17	11
Farm & Agricultural Services	14	3
Manufacturing and Forest Products	6	2
Construction	6	12
Mining	<1	<1

From 1970 to 2000, Grand County added $241 million in personal income. The Services and Professional sector accounted for 48% of new income.

Employment Sector	**Personal Income Change (1970-2000) (Millions of 2000 Dollars)**
Services and Professional	115
Government	29
Farm & Agricultural Services	-4
Manufacturing and Forest Products	2
Construction	33
Mining	1
Non-Labor Sources *	72

* Non-Labor Sources include dividends, interest and rent payments, etc.

Environmental Consequences: Neither the Current Use Alternative nor the Proposed Action or other action alternatives would have any major direct, indirect nor cumulative impacts on the area's socio economics. As can be seen from the data above, there has been a trend away from more of a natural resource-based economy to a more diverse economy. In 1992, the Louisiana Pacific Waferwood Mill closed its doors, resulting in the direct loss of approximately 100 jobs in Kremmling. Since that time, there has been resurgence and diversification in the economy and recreation-related industry is growing in the Kremmling area as well as throughout Grand County. More motorized and non-motorized users are visiting Grand County every year and tourism is actively promoted by the Grand County Tourism Board. Some of these visitors would probably take advantage of the designated route system in the Proposed Action or alternatives, and, while visiting the area, contribute to the local economy. There is a local OHV business in Kremmling as well as a mountain bike retail establishment. These businesses would likely

benefit somewhat from a well planned and signed designated route system in close proximity to Kremmling.

TRANSPORTATION:

Existing Environment: The Wolford Mountain area has an existing network of roads and trails that have been developed over many years to meet the variety of needs of local residents and public lands users. Many of the routes were established by permittees for access to grazing allotments and facilities, powerlines, telephone lines, access to private lands, etc. Other routes have been developed for recreational purposes, primarily for hunting access and game retrieval. These routes have been explored and used by OHVs after they were created. In the past twenty years, the recreational use has increased greatly and many of the routes that had low levels of use are now receiving high levels of use. The network of routes has become very important for a variety of commercial and recreational needs and uses.

The road surfaces in the area are predominantly native materials and vary in width, grade, and condition. Some routes have been maintained periodically by BLM and its permittees, primarily to reduce rutting and to maintain a drivable surface.

Some of the existing routes have water drainage features such as water dips, culverts, ditches, etc. to keep water from running down a grade with enough velocity and volume to erode the route. Braiding of routes has occurred over time by users who try to avoid going through either low spots with standing water or rutted segments. This double wide travel area increases the amount of vegetation lost and is a good indicator of a drainage problem.

Several route segments are proposed for relocation or new construction. These segments are proposed to complete loop rides or to avoid resource conflict areas on several ATV or motorcycle routes. Full sized vehicles have a wide variety of routes and experiences available and no new segments are proposed in this plan. Future proposals for new routes or relocations would be reviewed and analyzed to determine the need for additional access, improved opportunities, or to mitigate unforeseen impacts. As recreational use on BLM lands continues to increase there will be a need to add routes in the future. New routes may be used to separate different uses in order to minimize conflicts, to decrease or maintain use levels on certain routes, to relocate routes to reduce impacts due to poor location, grades, etc.

Environmental Consequences:

Current Use Alternative: The existing network of routes would remain virtually unchanged. The use of motorized vehicles would continue to be limited to existing routes and cross country travel by bicycles and other mechanized vehicles would continue. Maintenance would continue at minimal levels by permittees, BLM, and volunteer groups through grants and other outside sources of funding. Routes that have serious resource damage or conflicts would be closed through emergency measures as allowed by 43 CFR 8340.

Low Use Alternative: All motorized travel would be limited to designated routes and bicycles and mechanized vehicles would be limited to existing routes, except those designated Closed. Most routes that have resource damage or conflicts would be closed or limited in use to minimize

those problems. Maintenance costs would be lower than other alternatives due to fewer routes being open for recreational and administrative use.

High Use Alternative: All motorized travel would be limited to designated routes and bicycles and mechanized vehicles would be limited to existing routes, except those designated Closed. Fewer routes that have resource damage or conflicts would be closed or limited in use than the Low Use Alternative or Preferred Alternative. Maintenance costs would be higher than other alternatives due to more routes being open for use.

Proposed Alternative: All motorized travel would be limited to designated routes and bicycles and mechanized vehicles would be limited to existing routes, except those designated Closed. Most routes that have resource damage or conflicts would be closed or limited in use to minimize those problems. Maintenance costs would fall between the Low Use and High Use alternatives. Five trail segments are proposed for construction of motorcycle and ATV trails to avoid private lands and create loop rides. The motorcycle trail over the top of Wolford Mountain was found to cross a parcel of private property near the communications site. The private landowner has not posted the property and use on the trail has occurred for many years. BLM will work with the landowner to continue access across the private land until the trail can either be relocated on public land or an agreement is reached for continued public use of the existing trail.

The existing motorcycle trail location across Cow Gulch has several resource conflicts and needs to be relocated. The existing trail would be closed in the Preferred Alternative and an alternate location would be determined to maintain the loop trail ride opportunity. A short reroute is proposed near the southwest corner of the cliffs to avoid private property. A new motorcycle trail connector is proposed at the north end of the west side of the cliffs to connect from the existing trail to CR 227 to replace the connection lost due to closing of the routes on the west side. A short connection between two existing routes would be constructed to create an ATV loop trail. Cultural clearances and an Environmental Assessment would be completed for the new construction projects. The proposed alignments are shown on the Preferred Alternative map.

Mitigation: The following are common to the three action alternatives:

- Install, maintain, and replace signs on all routes to indicate whether they are open, limited or closed.

- Develop maps, brochures, and kiosks displaying the designated route system and the recreation opportunities in the project area.

- Develop maintenance standards and priorities to assure that routes are maintained appropriately and timely. Routes would be maintained to the width necessary for the designated mode of travel.

- Develop agreements with volunteer groups and individuals to provide maintenance and construction.

- Develop a monitoring plan to monitor use levels and route conditions to determine a maintenance schedule and prioritize routes.

- Conduct routine law enforcement patrols to assure compliance with designations and limitations.

- Survey and design routes for new construction and relocations to assure proper design standards to minimize impacts to soils, water, and wildlife.

Deferred maintenance and capital improvement funds may be acquired through BLM to maintain and improve routes in the project area. Grants are available through the Colorado OHV registration program, Great Outdoors Colorado, Federal Highways' TEA-21, and other similar programs for route improvements and maintenance. Grand County provides annual maintenance for its roads that provide the primary access to the project area. Coordination would be done with the road and bridge department on segments of county roads that have been identified with resource concerns.

Braided portions need to be reviewed and the appropriate drainage structures installed or other improvements made. The unused portions should be posted closed and/or reclaimed. Stream crossings would be evaluated to determine the appropriate type and amount of hardening that may be needed to provide a firm crossing that would minimize the amount of sediment created by vehicles and horses that cross running water.

VISUALS:

Affected Environment: Visual resource management (VRM) inventory classes are assigned through an inventory process and are informational in nature to provide the basis for considering visual values in the planning process. The entire field office, including the Wolford Mountain area, was inventoried for visual character as part of the resource information developed for the Kremmling RMP approved in 1984. Inventory Class I is assigned to those areas that have been congressionally and administratively designated areas to preserve a natural landscape. There are no Class I areas in the Wolford Mountain project area. Classes II, III, and IV are assigned based on a combination of scenic quality, sensitivity level, and distance zones.

The visual inventory for the RMP was mapped at a 1:126,000 scale and has been converted to 1:24,000 as closely as possible for GIS purposes. While the map shows a distinct line between two different classes, it is commonly more of a transitional area unless there is a geographical feature that makes for a more distinctive boundary.

The assignment of visual management classes is based on the management decisions made in the RMP. The classes correspond to the management objectives in an area and indicate the level of acceptable change that could occur within the class. Management decisions in the planning process must reflect the value of visual resources.

The objectives for VRM Classes are briefly described below

> Class I Objective: The objective of this class is to preserve the existing character of the landscape. This class provides for natural ecological changes; and may allow very limited

management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II Objective: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III Objective: The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape may be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Class IV Objective: The objective of this class is to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Class II Areas: The south and west faces of the cliffs, Wolford Mountain Reservoir, and the upper part of Wolford Mountain are within the Class II zone due to their visibility from the Town of Kremmling and US Highway 40. These are the more sensitive areas for visual resource values. The current visual character should be retained and protected. Many of the existing routes on the west face of the cliffs are single track motorcycle trails on the narrow ridge crests. For years, the low level of use did not create a readily apparent trail on some of the ridges. The trails on the west side have been increasing in size and visibility due to increasing use by ATVs and some 4WD vehicles. The trails at the southwest corner of the cliffs are also motorcycle trails but due to the steepness of the ridges are not receiving ATV use. The trails at the corner have been used for many years, while the ones on the west side have mostly been either developed or have seen increased use within the past 10 or so years. The two track routes on the south end of the cliffs have been used for many years for motorized vehicles. Access to these two track routes had been allowed via private property by the previous property landowner; however the property has changed ownership and access is now fenced at the property line. Full sized vehicles infrequently use the routes by coming down from the county road on top of the cliffs. Motorcycles have continued to use the routes as there are single track trails from the west that provide access.

Most of the routes near Wolford Mountain are primitive two track routes predominantly located in sage brush and other low vegetation. The access road to the communications site at the top is not visible as it is on the northeast side of the mountain. The motorcycle trail going over the top from the south is difficult to see as it located low in a draw on the east side of a ridge. The powerline access road on the south side of Wolford Mountain, at the southern edge of the Class II area, is visible from US Highway 40 but does not draw attention from the casual viewer.

Class III Areas: Areas classified here tend to be in the middle ground distance zone from Town and US Highway 40 or mid slope on Wolford Mountain. Most of the routes in this class are difficult to see due to their narrowness and surrounding vegetation. They tend to follow the contour due to the topography making them less evident. There are several routes that run up hillsides or ridge crests and are more readily apparent due to their linear appearance. Most of the area is dominated by sagebrush and other low vegetation with occasional small patches of timber. Portions of Muddy Creek are in the Class III area and provide a pastoral view of the riparian areas from some of the high points nearby. Most of the routes near the creek are ATV and motorcycle with small widths and relatively low visibility as they tend to follow the curves of the creek.

Class IV Areas: These areas tend to be the background or unseen areas from US Highway 40 or Town. Most of the area is dominated by sagebrush and other low vegetation with occasional small patches of timber. Most of the routes in this class are difficult to see due to their narrowness and surrounding vegetation. They tend to follow the contour due to the topography making them less evident. There are several routes that run up hillsides or ridge crests and these routes are more readily apparent due to their linear appearance.

Environmental Consequences:

Current Use Alternative: The routes along the west and southwest portions of the cliffs would continue to increase in visibility as the use levels increase. This would cause a degradation of the visual quality beyond that acceptable in the Class II areas. There would likely be a continuation of 'upsizing' of other routes throughout the project area that would make them more visible. In Class II areas this would degrade the visual resource while it may remain at an acceptable level in Class III areas. Class IV areas would not be negatively affected by the increase in size of the routes. Over time, the impacts of increased use and upsizing of routes could degrade the project area's visual resource.

Low Use Alternative: This alternative emphasizes the overall protection and enhancement of the visual resource more than any of the other alternatives. With the closure of 50% of the existing miles of routes and their revegetation over time, the routes would become more difficult to see. The closure of all trails on the west side of the cliffs would better meet its Class II character. The hill climb routes at the southwest corner of the cliffs would remain and slightly downgrade the area from the Class II standard. The casual observer may notice the routes but may not be able to discern that they are trails. The routes that remain open in the Class III and Class IV areas would stay at their current size and the areas would continue to meet their class objectives.

High Use Alternative: This alternative would provide a slight overall improvement over the current situation as about 17% of the routes would be closed or limited to administrative use. These limited and closed routes would revegetate over time and decrease in visibility. The continued and increasing use of the routes on the west side of the cliffs would degrade that area from Class II objectives. The hill climb routes at the southwest corner of the cliffs would remain and slightly downgrade the area from the Class II standard. The reduced visual quality in these more sensitive Class II areas would not be acceptable. The visual quality in the Class III and IV areas would not be changed appreciatively.

Proposed Action: This alternative would improve the overall quality of the visual resource over the Current Use and the High Use Alternatives and it would better meet the objectives of the Class II areas better than all other alternatives by closing the routes on the west side of the cliffs and the trails at the southwest corner of the cliffs. The revegetation over time of these routes would provide for a more scenic drive along Highway 40. The revegetation of the roughly 29% of the miles of routes to be closed and the improved vegetation on the 12% of miles of routes to be limited to administrative use would also improve the overall visual quality.

Mitigation:
Rehabilitation and/or revegetation of closed routes to the first visual break is recommended for routes in Class II areas.

CUMULATIVE IMPACTS SUMMARY:

The following is a summary of incremental impacts which would result from the Proposed Action or alternatives to the Proposed Action when added to other past, present, and reasonably foreseeable future actions:

Issues Identified

From internal and external scoping, the primary issues related to cumulative impacts include the following:

How would this project affect the area's natural, cultural and paleontological resources given other past, present, and reasonably foreseeable actions in the surrounding area?

- What effect would the project have on soils quantity and quality?
- What effect would the project have on vegetation, including Osterhout milkvetch (*Astragalus osterhoutii*)?
- What effect would the project have on water quality?
- What effect would the project have on noxious weeds?
- What effect would the project have on migratory species that depend upon the project area for Critical Winter Range or for other sensitive time periods in their life-cycle?
- What effect would the project have on Greater sage-grouse and their habitat?
- What effect would the project have on the area's cultural and paleontological resources, both known and unknown?

How would this project affect the area's human community and socioeconomics given other past, present, and reasonably foreseeable actions in the surrounding area?

- What effect would the project have on motorized and non-motorized recreation?
- What effect would the project have on the area's quality of life and economics?

Geographic Scope

Area A - Muddy Creek, Troublesome Creek and Middle Park Basin: For soils, water quality, and vegetation the geographic scope for discussing cumulative effects is the Muddy Creek and Troublesome Creek Watersheds. The project's cumulative effect on socioeconomics is best described within the context of the Middle Park Basin, since the communities within this basin are also contained within Grand County, but are relatively isolated from other surrounding mountain communities.

Past, present and reasonably foreseeable actions which have resulted in impacts include residential and commercial development, road construction, utility corridor development, grazing, and recreation use. Additional travel management efforts are planned for the remaining BLM public lands in the Middle Park Basin over the next few years. These efforts would complement what has already occurred on the Arapaho National Forest and in the Fraser Experimental Forest at the east end of the basin.

Direct Effects of the Proposed Action and Alternatives: The Proposed Action and alternatives, except for the Current Use Alternative, provide for a designated route system, eliminate travel on some existing routes, and eliminate off-road or off-trail motorized and mechanized travel. This would directly result in less soil disturbance and compaction, and reductions in water channeling and vegetation trampling within the project area. The extent of these reductions would correlate to the number of routes closed and reclaimed in each alternative, with the biggest reductions occurring in the Low Use Alternative. Another direct effect is that motorized use would be concentrated on fewer routes.

In the Current Use Alternative, cross-country motorized use would continue to occur. This would directly result in additional vegetation trampling, more soil disturbance and compaction, and water channeling.

Indirect Effects of the Proposed Action and Alternatives: The indirect effects of the Proposed Action and alternatives, except for the Current Use Alternative, would result in a reduction in soil and vegetation losses, less soil erosion, and improvements in water quality. The extent of these effects would correlate to the numbers of routes closed and reclaimed in each alternative, with the highest reductions resulting from implementation of the Low Use Alternative. Additionally, *Astragalus osterhoutii* would receive enhanced protection since designated routes would avoid identified populations, and cross-country travel through *Astragalus* habitat areas would be "prohibited" rather than "discouraged" as in the Current Use Alternative. Expanding the winter closure to include all motorized vehicles would prohibit all motorized use during snowmelt, a critical time to reduce soil erosion and water quality impacts.

In the Current Use Alternative, soil and vegetation losses would continue to increase, reducing the ability of the area to detain snowmelt, further exacerbating the already low flow situation in the tributaries to Muddy Creek created by irrigation on adjoining private lands.

Cumulative Effects of the Proposed Action and Alternatives: When added to the past, present, and reasonably foreseeable actions noted above, the cumulative effects of the Proposed Action and all alternatives would, with the exception of the Current Use Alternative, represent an improvement over the existing condition.

- Route designation in all alternatives would result in a major reduction of cross-country motorized and mechanized travel, and associated soil disturbances. Restricting travel to designated routes complements the travel management already in place on Forest Service system lands at higher elevations within the Muddy Creek and Troublesome Creek watersheds. Rutting and soil disturbances would continue at various locations on private lands.

- Reclamation of 'closed' routes would result in improved soil health, vegetative health, and water quality. More soil would remain on site, vegetation cover would increase and sediment travel would be reduced. A designated route system would complement the vegetation health improvements expected on the existing grazing allotments in the project area where new grazing systems are or will be put into place (see "Findings for Standard 3" in the Vegetation Section of this document). There would be slight improvements to water quality within the Muddy Creek and Troublesome Creek Watersheds.

- User demands and conflicts on the public lands from area growth would be better managed with the establishment of a designated route system. A managed route system could also result in higher user satisfaction, and supplement the area's attraction to motorized as well as non-motorized users. The route designation system also helps the BLM react to future issues—increased demands, separation of motorized/mechanical, etc. would be easier to manage for. Areas of resource concern and zones where motorized and non-motorized uses are more appropriate have all been identified through the internal and external scoping processes and public meetings for this project.

- Under the Current Use Alternative, there would continue to be incremental soil losses, further reductions in water quality, and more unmanaged use and conflicts on the area's public lands.

Area B - Combined Middle Park and North Park Basins: For noxious weeds, wildlife in general, Greater sage-grouse, cultural and paleontological resources, and motorized and non-motorized recreation, the geographic scope for discussing cumulative effects is the entire North Park and Middle Park Basins, including the Gore Pass and Rabbit Ears Pass areas. This scope was chosen because cumulative effects on these resources from the Proposed Action are more far reaching and better described in the context of the adjoining basins.

Past, present and reasonably foreseeable actions which have resulted in impacts in the combined North Park and Middle Park Basins are the same as described above, and include residential and commercial development, road construction, utility corridor development, grazing, and recreation use. Additional travel management efforts are planned for North Park over the next few years, and these efforts would complement what has already been completed on Routt National Forest lands in North Park.

Direct Effects of the Proposed Action and Alternatives: Eliminating cross country travel and establishment of a designated route system would directly result in fewer disturbances to the projects area's populations of wildlife, Greater sage-grouse, cultural and paleontological resources, since motorized travel would be restricted to designated routes. The extent of these reductions would correlate to the reduction in motorized use by alternative, with the Low Use

Alternative resulting in the highest reduction in disturbance and the High Use Alternative resulting in the least reduction. A designated route system would also directly reduce the number of conflicts between various types of motorized users and conflicts between motorized and non-motorized users, since motorized users would be directed to routes designated for a specific type of motorized use while non-motorized users are likely to use 'quieter' areas such as Wolford Mountain and those areas where motorized use is prohibited. In the Current Use Alternative, cross country travel would continue to occur and direct disturbance to the resources noted above would continue to increase.

Indirect effects of the Proposed Action and Alternatives: By eliminating motorized cross country travel, there would be a direct reduction in soil disturbance in the project area. This would indirectly result in an overall reduction in the establishment of noxious weeds. A winter restriction expansion and refinement associated with the Proposed Action and all of the action alternatives would reduce conflicts between winter motorized users and wildlife, indirectly improving the health of wintering wildlife.

In the Current Use Alternative, user created route proliferation would continue, resulting in increased soil disturbance and an increased potential for noxious weed establishment. Without an expanded winter restriction, which would take in the large amount of winter range north of Wolford Mountain, more winter conflicts between wintering wildlife and motorized users could occur, resulting in more stress and reducing wintering wildlife health.

Cumulative Effects of the Proposed Action and Alternatives: Eliminating cross country motorized travel would reduce the soil disturbance, vegetation losses and establishment of noxious weeds associated with this use. These are all impacts which affect the habitat for area wildlife as well as Greater sage-grouse.

A reduction in soil disturbance and noxious weed sites would lower the potential for weed seeds to be transported throughout the Middle Park and North Park areas by wildlife, cattle, motorized vehicles, etc as well.

The entire project area is an important winter habitat area for wildlife, including Greater sage-grouse. Except for the Current Use (No Action) Alternative, the Proposed Action and action alternatives provide for designated routes and an expansion of existing winter motorized restrictions. This would reduce disturbance to sage grouse throughout the year since off road travel would be prohibited. It would also promote more cover and forage for this species. Greater sage-grouse numbers should increase as a result, adding to other similar recovery efforts in the North Park Basin.

More cover and forage and reduced conflicts with motorized users would also benefit the area's big game wildlife health. Elk, mule deer, and antelope which migrate back and forth between North Park, the Gore Range, and Middle Park should be healthier going into the spring fawning and calving season in most years.

For cultural resources the cumulative effects of man derived erosion from OHV use, livestock grazing, illegal artifact collecting and vandalism is directly tied to access and represents the on-going, irretrievable, irreversible loss of a non-renewable resource, and the information and history that could have been provided by scientific inquiry. It is the opinion of the KFO

archaeologist that this loss will continue and accumulate over time through natural and man caused erosion, theft and vandalism. However, the overall affect of controlling OHV use and limiting access to designated roads and trails, public education and warnings of penalties for illegal activity, increased monitoring and patrol, management implementation of an aggressive and proactive cultural program coupled with increased management emphasis of other BLM resources should have an overall positive benefit to cultural resources.

The Proposed Action and the action alternatives, when considered with other similar actions such as travel management designations on other area public lands, provide for an additional designated route system where users can select routes which are best suited for their desired use and experience (see "Recreation" section above). The Medicine Bow-Routt National Forest, located to the east, west and north of the project area, provides some similar opportunities on designated routes, but primarily in a forested higher-elevation setting. The Radial Mountain and Willow Creek areas, in the North Park Basin approximately 30 miles north and east of the project area, are popular destinations for motorcycle users. ATV use throughout the North Park and Middle Park areas is on designated routes; however use is increasing and these vehicles are a popular and alternate means of transportation and recreation for hunters, campers and other recreation users.

PERSONS / AGENCIES CONSULTED:

A complete summary and chronology of the entire scoping process, including persons and agencies consulted, and public participation is provided in Appendix #1 of this document. The IDT developed an initial mailing list at the beginning of the project and continued to modify the list as the project progressed and additional interested parties contacted the field office. By the end of formal scoping on July 23, 2004, the list had grown to over 100 interested parties. This list is on file at the field office.

INTERDISCIPLINARY REVIEW TEAM:

Name	Title	Area(s) of Responsibility
Richard Rosene	Outdoor Recreation Planner Team Leader	Recreation, Visuals, Wilderness, Wild and Scenic Rivers, Noise, Transportation
Paula Belcher	Hydrologist	Soil, Air and Water, Riparian, Prime & Unique Farmlands
Charles Cesar	Wildlife Biologist	Wildlife, Migratory Birds, T&E Species
Dennis Gale	Assistant Field Manager	ACEC, Environmental Justice, Socio-Economics, NEPA
Ryan Homan	HazMat Coordinator	Wastes - Hazardous and Solid
Richard Johnson	Rangeland Management Specialist (Middle Park)	Vegetation, Range Management, Invasive, Non-Native Species
Steve McCallie	Forester	Forest Management
Frank Rupp	Archaeologist	Cultural, Paleontology
John Morrone	Geologist	Paleontology, Geology and Minerals
Susan Cassel	Realty Specialist	Realty
Bill B. Wyatt	Fire Archaeologist	Fire Management

ATTACHMENTS

APPENDICES:

Appendix 1: Outreach, Scoping and Public Meeting Chronology and Summary
Appendix 2: Cultural Resource References
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MAPS:

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Map 11: Cumulative Effects Analysis – Area A
Map 12: Cumulative Effects Analysis – Area B

APPENDIX 1

Outreach, Scoping and Public Meeting Chronology and Summary

May 18, 2003: Roz McClellan of Rocky Mountain Recreation Initiative coordinates a hike for 50+ individuals to the top of Wolford Mountain. Two Colorado Division of Wildlife game wardens discuss area wildlife and habitat. The field office NEPA coordinator and an outdoor recreation planner attend and discuss ongoing travel route inventory efforts, as well as the field office intent to begin formal travel management planning later in the year.

October 3, 2003: Formal outreach and public scoping for the Wolford Mountain Travel Management plan begins with a letter sent to stakeholders, interested parties, State and local government agencies, and area U.S. Forest Service offices in Granby, Dillon, and Walden. A notice is also published in the Sky Hi News and the Middle Park Times, two of the Grand County newspapers. The letter and notice announces a workshop to be held on October 22, 2003 at the Grand County Fairgrounds for the purposes of discussing and collecting information for a proposed travel management plan for the Wolford Mountain area.

October 9, 2003: At the request of Roz McClellan, representing the Rocky Mountain Recreation Initiative, an informal working group meeting is held with representatives of various environmental groups at the Kremmling Field Office. In attendance are Roz; Vera Smith (via teleconference- Colorado Mountain Club), Aaron Clark (Wilderness Society), John Ruhs, (BLM - Field Manager), Rich Rosene (BLM – Field Office Project Team Leader), and Dennis Gale (BLM - Field Office NEPA Coordinator). Items of discussion include desired future condition for the project area, the project area boundary, landscape scale analysis, non-motorized uses, noise, fragmentation, and the "Route Evaluation/Decision Tree Process", selected by the field office as a tool to use in the project area analysis.

October 22, 2003: The first of three workshops and public meetings is held at the Grand County Fairgrounds. To begin the workshop, the history of travel management in the Wolford Mountain area is presented, along with other pertinent background information such as mandates. A proposed schedule and tasks for the project completion are also presented. A breakout session follows, during which attendees have the opportunity to discuss their thoughts and ask questions of field office specialists regarding the various resources and resource management in the project area. There are thirty attendees at the workshop, and comments are collected on comment forms. A summary of comments from attendees and interested parties who could not attend the meeting is provided in Appendix #1.

December 11, 2003: At the request of the Friends of Wolford Mountain (Friends), an informal working group meeting is held at the Kremmling Field Office to review and discuss a travel management plan alternative which the Friends wish to submit to the project team for consideration. In attendance are Melinda McWilliams and Roger Shaw (Friends), Rich Rosene (BLM – Project Team Leader), John Arkins (BLM – Outdoor Recreation Planner), and Dennis Gale (BLM – NEPA Coordinator). Items of discussion included the project area boundary, motorized crossing of Cow Gulch, volunteer assistance to construct and/or maintain hiking trails, and the use and availability of the data being collected and used in conjunction with the project analysis.

January 14, 2004: A project update letter is sent to all interested parties listed on a comprehensive project mailing list prepared following the first public meeting. The mailing list also includes email and phone contacts from individuals expressing an interest in the project. The January 14 letter discusses project progress on alternative development, reviews the proposed action and need for the action, and sets the date for the second public meeting as March 17, 2004. The letter encourages recipients to continue to submit comments and suggestions to the field office.

March 5, 2004: A press release is issued noting the time and place for the second travel management workshop, and the opportunity to meet with field office specialists to discuss resource issues raised during scoping including wildlife, riparian, cultural, noise, commercial uses, and recreation uses. The release encourages area residents and interested parties to attend for review and discussion of the range of alternatives developed from internal and external comments.

March 10, 2004: A letter is issued to all interested parties listed on the mailing list, noting the March 17 workshop and the importance of input for developing a proposed or preferred alternative. Included is a mention that a third public meeting will be held once a preferred alternative is developed. For those who cannot attend the March 17 meeting, a contact for project input is provided.

March 16, 2004: A letter is received from a number of environmental groups noting that the range of alternatives should incorporate all of the scoping issues raised by the environmental community and included in this letter. The letter also includes a "vision plan" for the Friends of Wolford Mountain, which divides the project area into several "management areas", notes reasons for conducting a road density analysis and includes a number of recommendations for implementation of the plan as well.

March 17, 2004: The second workshop is held at the Grand County Fairgrounds in Kremmling. There are twenty five attendees at this meeting. The range of travel route designation alternatives, from low-use to high-use is presented, together with an in-depth discussion of the "Route Evaluation/Decision Tree" tool which the IDT is using in the analysis process. In order to seek more input for developing a preferred alternative, attendees are encouraged to share their comments with staff after the presentation and written comment sheets are distributed and collected. Times are noted when individuals and groups may come into the field office and review the alternative maps in detail.

March 19, 2004: A letter is sent to all interested parties on the mailing list to advise them of the posted times when the field office is open to allow review of alternative maps and discuss alternatives with field office staff. Four dates are noted, with three hours allotted each day for review and discussion. The comment period for submission of comments on the draft range of alternatives is extended through April 16, 2004. Interested parties are strongly encouraged to submit detailed comments, and a third public meeting is mentioned for display of the preferred alternative. If individuals are unable to visit the field office during the listed dates, they are advised to contact Project Team Leader Rich Rosene at (970) 724-3006 to schedule an alternate date.

April 2, 2004: A meeting is held at the field office at the request of the Friends of Wolford Mountain for the purpose of reviewing and discussing a proposed alternative being submitted by the Friends. In attendance for the Friends are Roz McClellan and Melinda McWilliams. Following discussion of the submitted alternative the Friends representatives are advised that the alternative will be considered as the draft proposed alternative is developed.

May 8, 2004: A hike up Wolford Mountain, organized by Roz McClellan of the Rocky Mountain Recreation Initiative is made by 54 individuals. Frank Rupp, the field office archaeologist, attends for the field office. Discussions of area cultural resources, including native religious and vision quest sites, and area wildlife are held throughout the hike.

May 14, 2004: A letter is issued to the Tribal Chairpersons and Council Members to solicit comments on the project. Included with the letter is a project area map. The letter mentions previous cultural resource inventories and findings and requests feedback by June 18, 2004. A letter is received from the Southern Ute Indian Tribe on May 26, acknowledging receipt of the May 14 letter, and the recording of numerous sites in the Wolford Mountain project area.

June 3, 2004: A letter is issued to all interested parties on the mailing list noting that a third workshop will be held on June 21, 2004 at the Grand County Fairgrounds. The workshop will provide maps and information for the draft proposed alternative. A press release noting the upcoming meeting is released on June 14 and notice of the meeting is provided in local newspapers. The mailing list has grown to 110 interested parties.

June 14, 2004: The Northwest Resource Advisory Council (RAC) is added to the mailing list (had previously been inadvertently omitted), and a letter is issued to the RAC advising them of the upcoming June 21 meeting. The letter notes a scheduled opportunity to meet with the RAC later in August to discuss the project and the "Route Evaluation/Decision Tree Process".

June 21, 2004: A third public meeting and workshop is held at the Grand County Fairgrounds to display the draft proposed alternative and discuss the alternative in detail with attendees. After a brief discussion of the area planning history to date, a schedule update for plan completion and implementation is provided and a breakout session follows, allowing for one-on-one comments and discussion with field office staff. Attendees are encouraged to continue submitting written comments on provided comment forms by July 21, 2004. Six open house dates of 3 hours per day are announced when individuals may visit the field office to review and comment on the preferred alternative. There are twenty attendees.

June 29, 2004: A letter is issued to all interested parties on the project mailing list and a press release is issued announcing the comment period for the draft proposed alternative. The open house dates for visiting the field office and reviewing and commenting on the draft proposed alternative are included. The comment period is extended to July 23, 2004.

July 23, 2004: The end of scoping and comment period. At this point in the project schedule, the IDT members conduct additional ground truthing where necessary and begin to conduct environmental impact analysis for the project alternatives.

August 12, 2004: The Northwest Colorado Resource Advisory Council (RAC) held one of their regular quarterly meetings in Kremmling. A presentation was made to the committee about the travel management plan and the "Route Evaluation/Decision Tree Process". The alternatives, including a draft proposed alternative, were presented and discussed with the RAC.

APPENDIX 2

Cultural Resource References

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Athearn, Frederic J.
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1977 Island in the Rockies. Grand County Pioneer Society. Granby, Colorado.

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Fitting, J. E. et.al.
1977 A Class II Cultural Resources Inventory of the Middle Park Planning Unit, Craig District, Colorado. Commonwealth Associates, Inc. Jackson Michigan.

Mehls, Steven F.
1984 Colorado Mountains Historic Context. State Historic Society of Colorado. Denver, Colorado.

Metcalf, Michael D. and Kevin D. Black
1991 Archaeological Excavations at the Yarmony Pit House Site. Cultural Resource Series Number 31. Bureau of Land Management. Colorado State Office. Denver, Colorado.

Nickens, Paul R., Signa L. Larralde and Gordon C. Tucker
1981 A Survey of Vandalism to Archaeological Resources in Southwestern Colorado. Cultural Resource Series Number 11. Bureau of Land Management. Colorado State Office. Denver, Colorado.

O'Neil, Brian
2004 A Class III Cultural Resources Survey of Selected Roads for the 2004-BLM Travel Management Plan, Wolford Project area, Red Mountain and Horse Gulch Sub Units, Grand County, Colorado. Western Colorado Archaeological Consultants. Grand Junction, Colorado.

Reed, Alan D. and Michael D. Metcalf
1999 Colorado Prehistory: A Context for the Northern Colorado River Basin. Colorado Council of Professional Archaeologists. Denver, Colorado.

APPENDIX 3

Cultural Sites That Are Directly Impacted Due to Road/Trail Going
Through or Immediately Adjacent to the Site
And in Immediate Jeopardy from Use and Maintenance
(GIS and Mapping Data Only - Not Ground Truthed)

Cultural Site #	Proposed Action: Recommended Route Designation	Mitigation Recommendation
	AREA 1	
5GA143	C.R. 277/ Open	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA639	Open/ C.R. 25 + Close/Rehab ** See also Area 4	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site
5GA686.5	Victory Highway/Open/ATV	Use of Victory Highway is acceptable for OHV Use; Monitor for vandalism and degradation
5GA1906	State Land/Open	Recommendation To State: Monitoring-no expansion of existing foot print; Coordinate with State to protect this site.
5GA3321	Open	Monitoring-No expansion of existing foot print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA3322	Open + Closed/Rehab	Monitoring-No expansion of existing foot print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA3323	Closed/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA3327	Open + Motorcycle + Close/Rehab	Monitoring-No expansion of existing foot print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA3328	Open	Monitoring-No expansion of existing foot print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA3329	Close/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA3330	Close/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA3333	Open + Seasonal Closure	Monitoring-No expansion of existing foot print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
	AREA 2	
5GA146	Open/ C.R. 224	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.

Cultural Site #	Proposed Action: Recommended Route Designation	Mitigation Recommendation
	AREA 2 (CONT'D)	
5GA172	Open	Monitoring-No Expansion of Existing Foot Print or Expansion of Y Intersection; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA637	Open	Monitoring-No Expansion of Existing Foot Print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA645	Close/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA652	Open/ C.R. 224	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA1499	Open	Reroute/Close; Monitoring-No Expansion of Existing Foot Print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA1670	Open	Monitoring-No Expansion of Existing Foot Print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA1753	Open + ATV + Private & BLM Lands	Site should be protected on west and north by an existing fence (Field Check); Monitoring
5GA2955	Open + Motorcycle	Monitoring-No Expansion of Existing Foot Print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA3004	Open/C.R. 224	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA3011	Open + Motorcycle + Close/Rehab	Monitoring-No Expansion of Existing Foot Print; ; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.; Monitoring and Avoidance During Closure and Rehab
5GA3068	Open	Monitoring-No expansion of existing foot print; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
	AREA 3	
5GA197	Open/ C.R. 25	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA206	Open/ C.R. 25	Restrict C.R. Maintenance to existing footprint; No new run outs for drainage or improvements; Closely spaced metal t-posts to define maintenance limits; Signs-Stay on Road & No Camping; Testing/Mitigation

Cultural Site #	Proposed Action: Recommended Route Designation	Mitigation Recommendation
	AREA 3 (CONT'D)	
5GA207	Open + ATV	Monitoring-No Expansion of Existing Foot Print; ; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA265	Open/ C.R. 25	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA295	Open	Monitoring-No Expansion of Existing Foot Print; ; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA631	Open/ C.R. 25	Coordinate w/Grand County to restrict road operations & maintenance to existing footprint; No new run outs for drainage or improvements; Install closely-spaced metal T-posts or similar markers to define maintenance limits through site; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation.
5GA632	Close/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA638	Open + Close/Rehab	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA640	Open + Motorcycle	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA641	Close/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA649	Open + Close/Rehab	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA650	Close/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA686.4	Victory Highway	Use of Victory Highway is acceptable for OHV Use; Monitor for vandalism and degradation
5GA804	Open	Reroute Trail to the East; Administrative Only Access to Spring; Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA1779	Close/Rehab	Monitoring and Avoidance During Closure and Rehab
5GA2173	Open + Admin	Monitoring-No Expansion of Existing Foot Print; Buck and pole fence along both sides of road; Potential educational/interpretive site, but not until protection and mitigation have been assured. Possible Religious Site; Native American Consultation needed.
	AREA 4	
5GA186	Open + Admin	Monitoring-No Expansion of Existing Foot Print; ; Construct buck and rail fence or other physical barrier to prohibit camping or off-road use; Testing/Mitigation
5GA199	Open	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA200	Open	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation

Cultural Site #	Proposed Action: Recommended Route Designation	Mitigation Recommendation
	AREA 4 (CONT'D)	
5GA206	Open/ C.R. 25 ** See Also Area 3	Restrict C.R. Maintenance to Existing Footprint; No new run outs for drainage or improvements; Closely spaced metal t-posts to define maintenance limits; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA297	Open/ C.R. 25	Restrict C.R. Maintenance to Existing Footprint; No new run outs for drainage or improvements; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA633	Open + ATV	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA639	Open/ C.R. 25 + Close/Rehab ** See also Area 1	Restrict C.R. Maintenance to Existing Footprint; No new run outs for drainage or improvements; Closely spaced metal t-posts to define maintenance limits; Signs-Stay on Road & No Camping; Testing/Mitigation
5GA2231	ATV	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation (No Site Forms on File)
	AREA 5	
5GA686	Victory Highway	Use of Victory Highway is Acceptable for OHV Use; Monitor for vandalism and degradation
5GA1902	US Highway 40	Restrict Highway Maintenance to Existing Footprint; No modifications or improvements outside of existing fenced foot print
5GA2179	Open	Monitoring-No Expansion of Existing Foot Print; Signs-Stay on Road & No Camping; Testing/Mitigation

APPENDIX 4

PROGRAMMATIC AGREEMENT

AMONG THE BUREAU OF LAND MANAGEMENT-KREMMLING FIELD OFFICE, THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, THE COLORADO STATE HISTORIC PRESERVATION OFFICER REGARDING THE IMPLEMENTATION OF THE TRAVEL MANAGEMENT PROGRAM

WHEREAS the Bureau of Land Management-Kremmling Field Office ("BLM-KFO") intends to administer a travel management program to be detailed in a series of forthcoming management plans; and

WHEREAS the Area of Potential Effect ("APE") comprises the entire BLM-KFO jurisdiction (all BLM lands in Middle and North Parks, Colorado); and

WHEREAS BLM-KFO administers hundreds of miles of roads and trails, ranging from well maintained gravel roads to user created trails; and

WHEREAS BLM-KFO in consultation with the Colorado State Historic Preservation office ("SHPO") and the Advisory Council on Historic Preservation ("Council"), has determined that the Travel Management Program might affect historic properties; and

WHEREAS the BLM and the Council have entered into a programmatic agreement dated May 26, 1997; and Colorado BLM and the Colorado SHPO have entered into a protocol agreement dated April 26, 1998; and

WHEREAS the Native American Tribes listed in Attachment 1 were invited to participate in consultation regarding this undertaking and have been invited to concur in this Programmatic Agreement; and

NOW, THERFORE, BLM-KFO, the SHPO and Council agree that the program shall be administered in accordance with the following stipulations to satisfy BLM-KFO's responsibilities under Section 106 of the National Historic Preservation Act for all individual undertakings of the program.

STIPULATIONS

I. PLANNING

A. Pursuant to Part VI of the Protocol, BLM will share its transportation plans with SHPO at the earliest opportunity.

B. The BLM-KFO archaeologist will provide input into BLM's transportation plans.

II. CULTURAL RESOURCES INVENTORY

A. Because of the magnitude of the undertaking, and the low potential for historic properties in certain areas, BLM-KFO will determine whether a Class I (literature review), Class II (reconnaissance), or Class III (intensive) cultural resources inventory is needed.

B. BLM-KFO will determine the inventory level based on information collected during literature reviews focused on the vicinity of the roads or trails under consideration, on topographic, vegetation, slope and other factors, and on the knowledge of the KFO Archaeologist. An example of a Class II area would be one where multiple cultural inventories have been conducted, and few to no cultural resources have been discovered. In such a case, only locations where sites are likely to be present would be culturally inventoried, such as terraces adjacent drainages, hills or ridgetops, or areas near permanent or ephemeral waters sources.

C. Where cultural inventory is determined necessary, the archaeologist will survey a corridor that extends a minimum of 50 feet on both sides of the centerline of a trail or road and will include inventory for staging areas, with a minimum 50 foot buffer around the staging area, for the purpose of unloading or loading of vehicles, horses, bicycles, etc.

D. Before BLM-KFO carries out any ground disturbing undertaking (such as signing that requires excavation, installation of a cattle guard, changing a route, reclaiming a route, etc.) that has not been subject to a cultural resources inventory, the BLM-KFO archaeologist will determine if a Class I, Class II or Class III inventory is needed, and inventory will be completed prior to implementation of the undertaking.

E. If BLM-KFO discovers a possible historic property it will record and evaluate the site for eligibility to the National Register of Historic Places ("NRHP"), and will follow standard consultation procedures outlined in BLM's Protocol agreement with SHPO.

F. If a historic property is suffering adverse impacts resulting from the use of a road or trail, BLM-KFO will immediately take action, such as rerouting traffic or emergency treatment of the site, to protect it from further damage until consultation activities are complete.

III. PRIORITIZATION

Because a wide range of roads and trails are present in the APE and are categorized by level of formality and size, when determining the order in which they will be inventoried, BLM-KFO will place the greatest emphasis on the roads and trails for which the type of use is most likely to adversely affect historic properties.

	(Gravel)	(Dirt)	(Unimproved)	4WD	(Trails 48" and wider)	(Trails narrower Than 48")
Motorized	3	2	2	2	1	1
Non-motorized	3	3	3	3	2	2

1=High Priority; 2= Medium Priority; 3=Low Priority

IV. MAINTENANCE ACTIVITIES

A. Before BLM-KFO performs maintenance activities of a specific road or trail, it will first determine whether a cultural resources inventory has been performed. If not, BLM-KFO will follow procedures in Section I above.

B. If an inventory has been performed and historic properties have been identified, BLM-KFO will determine in consultation with SHPO, whether maintenance activities will constitute and adverse effect.

C. If maintenance activities will cause historic properties to be adversely affected, BLM-KFO in consultation with SHPO, will determine whether avoidance is possible or whether treatment is necessary.

D. If treatment is necessary, BLM-KFO will complete its mitigation activities before maintenance activities commence.

E. If during the course of maintenance or other ground disturbing activities, a historic property is uncovered or otherwise discovered, BLM will follow procedures detailed in Part X of the Protocol.

V. NATIVE AMERICAN CONSULTATION

A. BLM-KFO will consult annually with Native Americans regarding the BLM's plans for road maintenance for that year.

B. BLM-KFO will also consult with Native Americans on individual transportation plans.

C. Native American consultation will be conducted following procedures in Part VI of the Protocol and the BLM 8160 Manual.

D. If during the course of conducting an inventory, BLM-KFO discovers a possible burial, religious sacred site or traditional use property, BLM-KFO will take measures to protect the site and notify the Native American Tribes (Tribes) listed in Attachment 1.

E. BLM-KFO will provide the Tribes with documentary information about the property, including site forms, photographs and maps.

F. The Tribes will have 30 days to respond to BLM-KFO with comments and concerns. If BLM-KFO does not hear from the Tribe during that time, it will assume the tribe has no comments or concerns.

G. BLM-KFO will take into account comments and concerns raised during the consultation and will take appropriate measures as necessary. Such measures might range from avoiding the property to closing the road or trail.

BUREAU OF LAND MANAGEMENT

John F. Ruhs
Field Manager
Kremmling Field Office

16 Dec 2004
Date

COLORADO STATE HISTORIC PRESERVATION OFFICER

for Georgianna Contiguglia

Dec. 21, 2004
Date

SOUTHERN UTE TRIBE

Acting Tribal Chairman

1-11-05
Date

Tribal Consultation List:

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Uintah and Ouray Tribal Business Committee
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Ms. Besty Chapoose
NAGPRA Representative
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Ute Mountain Ute Tribe

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Ute Mountain Ute Tribe
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Tawoac, Colorado 81334

Mr. Terry Knight
NAGPRA Representative
Ute Mountain Ute Tribe
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Southern Ute Indian Tribe

Chairman Howard Richards
Southern Ute Indian Tribe
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Mr. Neil Cloud
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Shoshone Business Council
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Northern Arapaho Tribe

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APPENDIX 5

Watershed Analysis

Soil Information: The Wolford Travel Management Area's soils are mapped in the Grand County Soil Survey. The Survey, done by the Natural Resource Conservation Service, was published in 1977 and not yet available in a digital format. The BLM has scanned the four maps the cover the project area to allow for GIS analysis of the area. The Wolford area consists of numerous soil mapping units, although 49% consists of Harsha loam soils. Harsha loams were formed in alluvial sediments from sedimentary rock. The surface soil textures are loam with clay loams approximately 6 inches from the surface. Calcareous material is found about a foot below the surface, with moderate alkalinity.

The major soil mapping units within the Project Area are summarized below:

Soil Unit	Acres/ Percent of Area	Hydrologic Soil Group	Erodibility (k factor)	Erosion Tolerance (T factor)
Harsha loam, 15-50% slopes, eroded	10591 acres 24.8%	B	0.28	5
Harsha loam, 6-15% slopes	7467 acres 17.5%	B	0.28	5
Harsha loam, 0-6% slopes	3025 acres 7.1%	B	0.28	5
Roxal loam, 15-50% slopes	3011 acres 7.1%	D	0.28	2
Cryorthents-Rock outcrop complex, extremely steep	2981 acres 7%			
Cumulic Cryaquolls, nearly level	1822 acres 4.3%			
Aaberg clay loam, 15-30% slopes	1388 acres 3.3%	D	0.28	3
Leavitt loam, 6-15% slopes	1365 acres 3.2%	B	0.37	5
Aaberg clay loam, 15-30% slopes	1357 acres 3.2%	D	0.28	3
Binco clay loam, 2-6% slopes	1134 acres 2.7%	D	0.28	5
Quander stony loam, 15-55% slopes	1092 acres 2.6%	B	0.15	5
Tine cobbly sandy loam, 15-55% slopes	1074 acres 2.5%	A	0.15	3

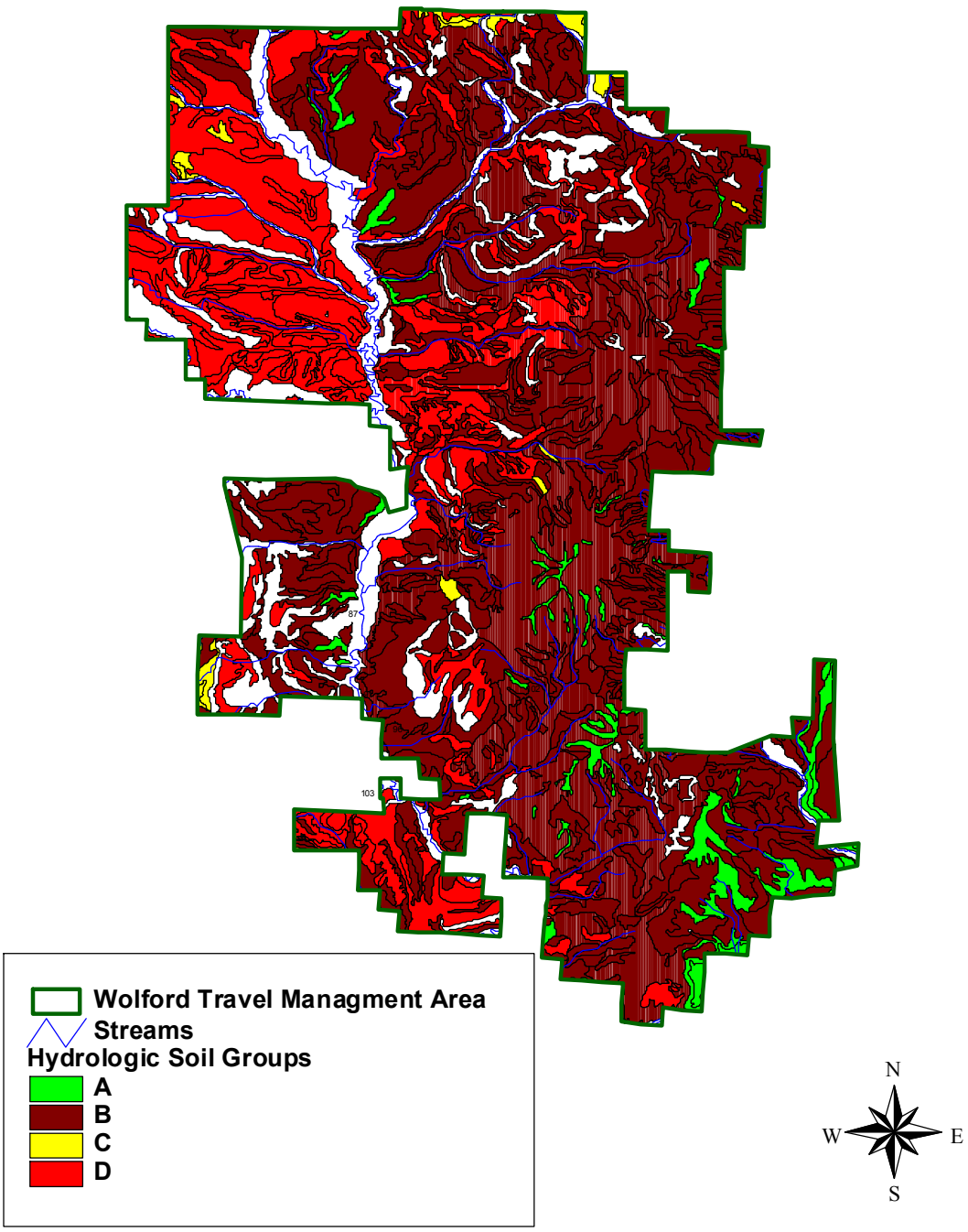
Cryorthents are soils that lack horizon development and primarily are on recent erosional surfaces-geologic or land-use induced. They are generally found on high mountains or in high latitudes. Textures tend to be sandy-skeletal, on slopes where rock is shallow, and are in a cryic (cold) soil temperature regime. In the Grand County mapping unit, bedrock is between 10-40 inches from the surface. The mapping unit is approximately 55% cryorthents and 30% rock outcrop, with small areas of other soils. For most of the runoff and erosion calculations, these units were treated as responding as rock outcrops. Cumulic Cryaquolls are soils that "have an overthickened mollic (dark brown to black) epipedon (top layer) as a result of slow accumulation of material washed from higher areas" (NRCS). They have wet (aquic) conditions either above a rock or impermeable layer or within 40-50 cm of the mineral soil surface and are in a cryic soil temperature regime. For this analysis, these soils were treated as having wetland values.

The Hydrologic Soil Group is an indicator of the amount of runoff production. "The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration (SCS)." Soil groups do not consider the vegetative cover or the slope, both of which are separate factors in estimating runoff amounts. "A" soils have the lowest runoff production, while "D" soils have the greatest. D soils may have poor infiltration rates due to clay layers near the surface, or having high water tables, or being shallow soils over bedrock. The Hydrologic soil group was used to summarize the soils for each drainage area and for each hydrologic response unit (see Watershed Information). The K factor is from the Universal Soil Loss Equation, and is a measure of the susceptibility of the soil to erosion by water. Generally values higher than 0.35 are considered "erosive". T factors are an indicator of the soil's tolerance to water and wind erosion without reducing the environmental quality. The T factor is expressed in tons of soil loss per acre per year.

Additional Soil Information: In addition to creating overlays of the project area of erosive soils and hydrologic soil groups, an overlay was created of slopes greater than 30% to identify routes that were located on steep portions of the project area. The Revised Universal Soil Loss Equation (RUSLE) was used to compare relative soil loss for road of concern. The USDA's Watershed Erosion Prediction Project (WEPP) for rangeland and disturbed areas was used to compare predicted sediment loads from various road locations. The predicted sediment losses and loads were less important in the use of the models as the relative increase or decrease between alternatives or in comparing routes.

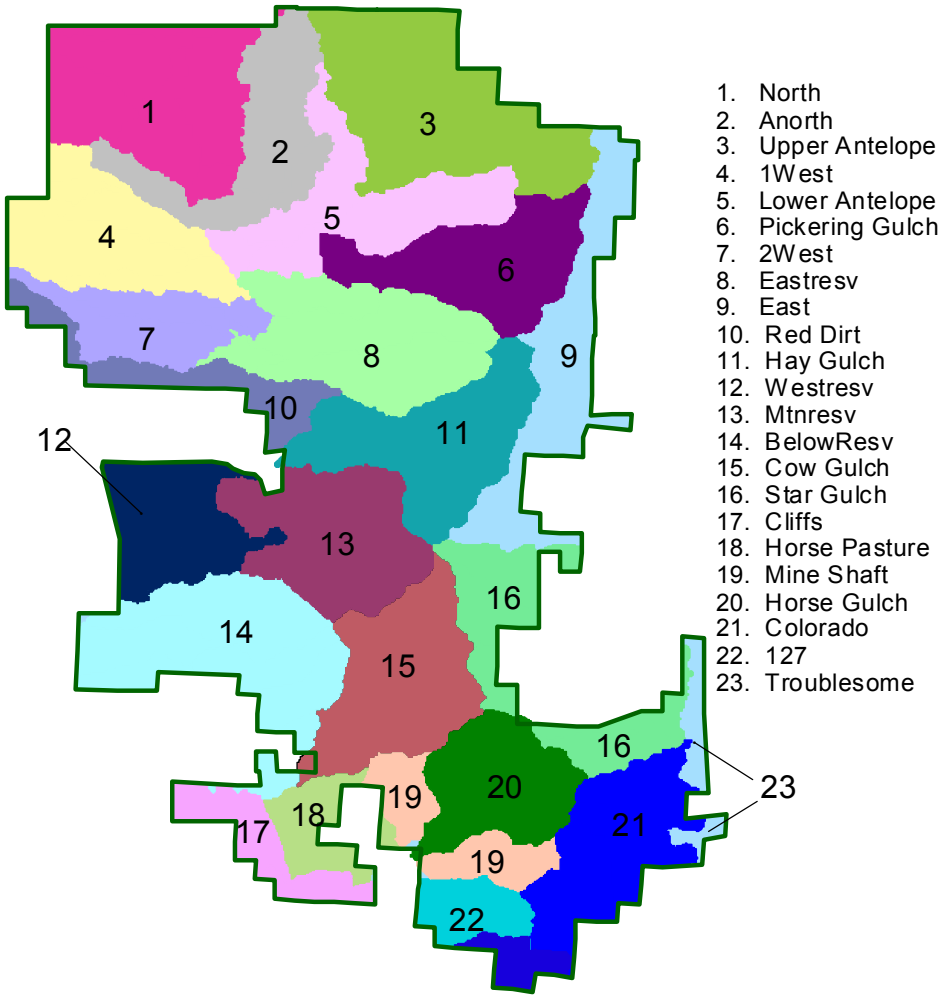
Watershed Information: The Project Area is located within the Upper Colorado River basin. The Muddy Creek 5th order watershed covers most of the project, with some of the eastern portion lying within the Troublesome (6th Order) watershed. There is also a small portion in the south east corner that drains to the mainstem of the Colorado River. An overlay of smaller (about 2,000 acres) drainage areas was created for the project area. The drainage areas consisted of the few perennial or intermittent streams that are located entirely in the project area, major ephemeral drainages, and the portions of other drainage areas within the project boundaries. (See example maps). Each drainage area was reviewed for erosive soils, runoff potential, and road densities for each alternative. To aid in the review, the drainage areas were subdivided into hydrologic response units (HRUs) with slopes, soils, and roads summarized for each response unit. Runoff potential was calculated for no roads, exisiting, and each alternative for each drainage area and each HRU. A 100 foot buffer zone was also overlain over all surface waters to highlight routes that occur near surface water.

Hydrologic Soil Groups in
The Wolford Travel Management Project Area



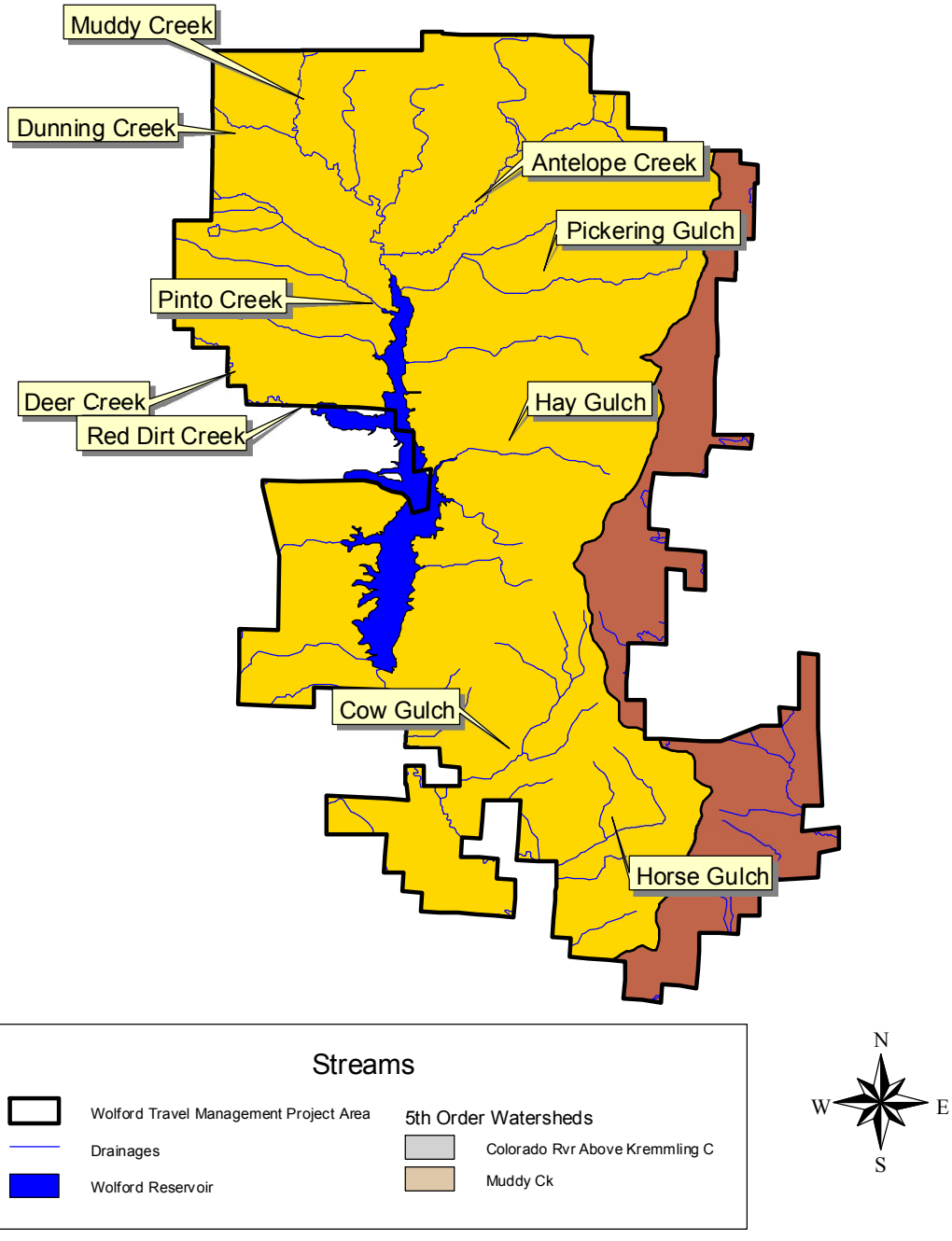
Appendix 5, Map A

Delineated Drainage Areas for the Wolford Travel Management Project



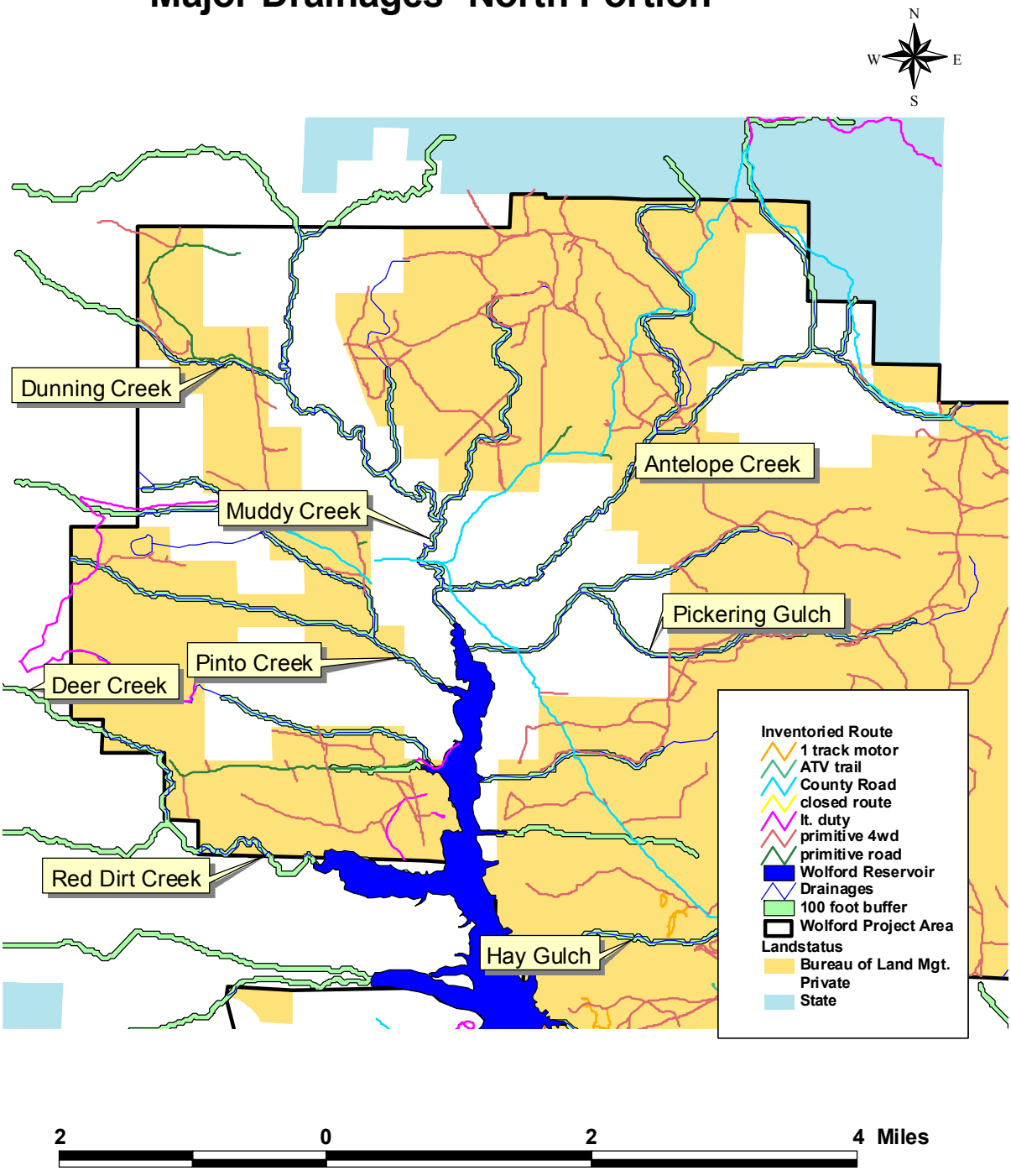
Appendix 5, Map B

Wolford Travel Management Project Area
Streams



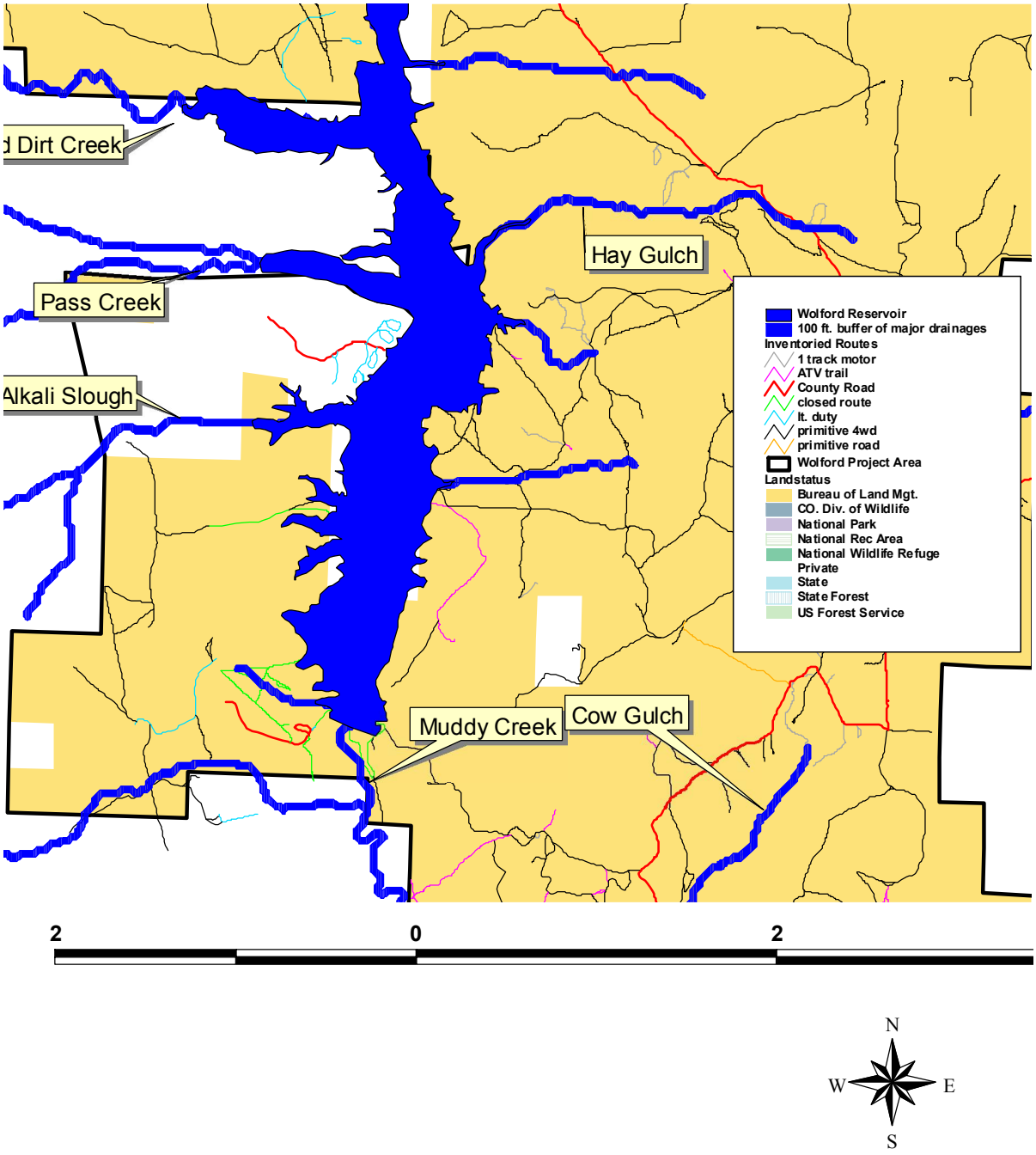
Appendix 5, Map C

Wolford Travel Management Area
Major Drainages- North Portion

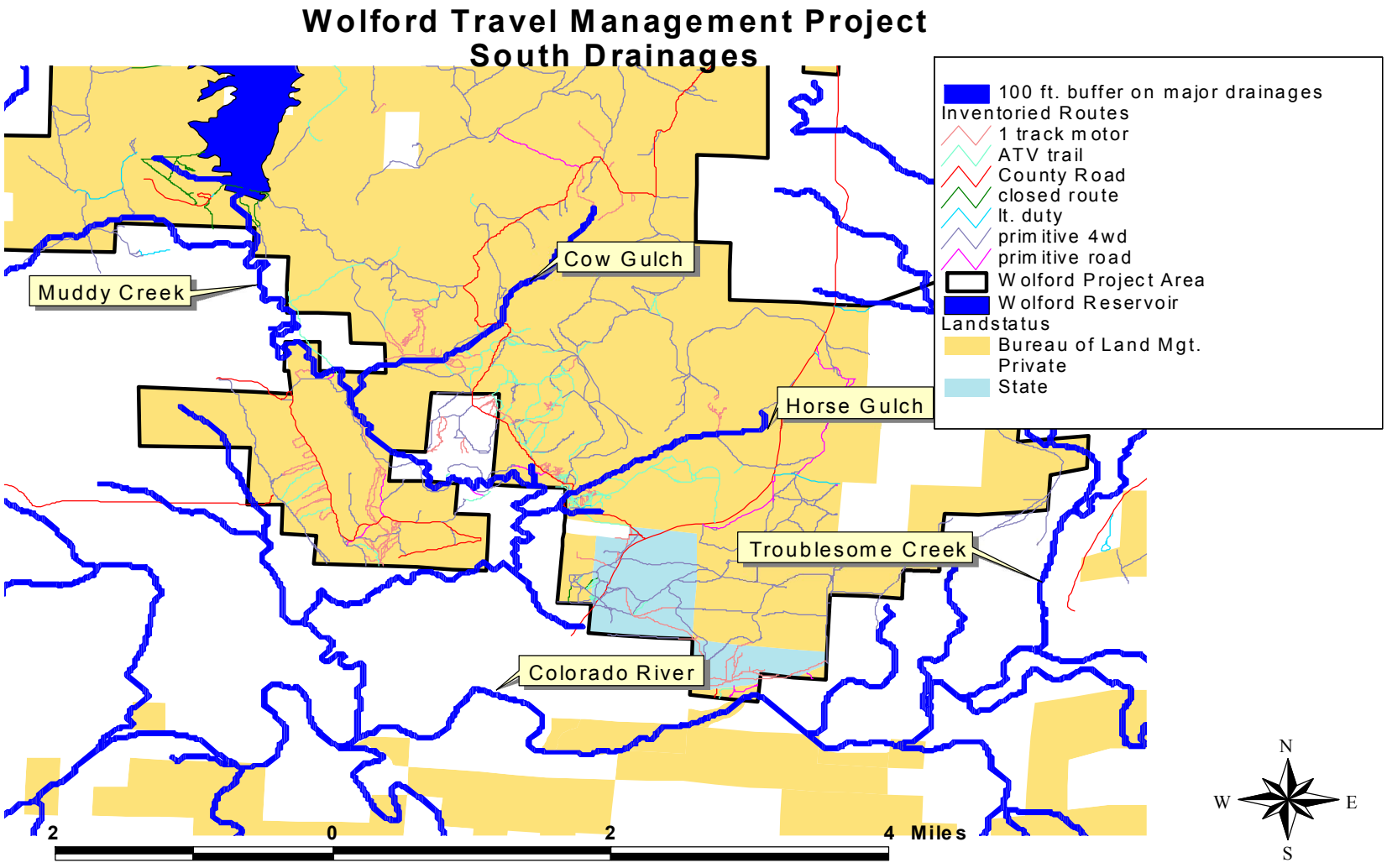


Appendix 5, Map D

Wolford Travel Management Area
Major Drainages- Midsection View



Appendix 5, Map E



Appendix 5, Map F

Three drainage areas were particularly focused on: Cow Gulch, Hay Gulch, and Horse Gulch. Cow Gulch and Hay Gulch were selected due to both drainages having perennial water and being located in the more heavily traveled portions of the project area. Horse Gulch was selected due to it being in the midst of the high route density area.

Some assumptions were made in comparing alternatives-

- the plan's standard widths were used to in the analysis. It is acknowledged that some route's impacts are much more or much less than the standard. Due to the volume of data, the standard widths were used as numerical comparisons were the objective. Route "growth" occurred if the inventoried route type was narrower than the alternative's type. For example, a route may have been listed in the inventory as "ATV", but under an alternative, it is listed as "OPEN".

- an administrative use only designation would not change the route width, but over time, the vegetative cover would improve some. This is dependant on many factors and may take several years to achieve. For many of the routes, however, an administrative use designation would result in similar conditions as closed routes that were revegetating naturally.

- Condition surveys were considered but not factored into calculations. Route conditions can be temporal and difficult to assess from the field notes. With maintenance, or improvements, many routes could be improved without needing closure or reroute. The route analysis focused on the general location of the route, the purpose of the route, and the sustainability of the route without unacceptable direct or indirect impacts.

- Aerial photography was used to add private roads that occur within the drainage unit- in or outside of the project area. Highways were not included in the road acreage. Acreage also includes the Wolford Campgrounds. These types of "bare soil" areas are not reflected in a linear analysis.

Water Quality:

A summary of the water quality in the area is included in Table WQ. The data is BLM field collected data except for Muddy Creek. The Muddy Creek data is a United States Geological Survey (USGS) sampling site at the outlet of Wolford Reservoir. The number of samples for each stream and for each element varies greatly, with many of the sites only being sampled 1-3 times/year from May-September. Where the data range considerably, a "common" concentration is given in parentheses. Where only a single value is given, it is usually the only value for the site. For example, manganese has more recently become a concern in Muddy Creek, so the BLM has started sampling for it. Only 1 analysis for manganese has been done to date on Pinto Creek. The Pinto Creek site appears to have changes in the upstream irrigation practices since the Wolford Reservoir was constructed. In general, the lower values are from recent years, and the higher numbers are from pre-reservoir construction.

Water Quality Data within the Project Area
Table WQ

	State Standard	Antelope Crk	Cow Gulch	Deer Creek	Muddy Creek	Pinto Crk
Flow cfs		0.06-1.5 (0.1-0.3)	0.05-0.4 (0.1)	0.2-12.2	3-1000 (80-90)	0.4 - 6.7 (2.6)
pH	6.5-9.0	7.5-8.4	8-8.7	6.4-9.0 (8)	7.3-8.8	7.7 – 8.18
TSS mg/L		0.5- 580 (10)	U-1170 (40-50)	12-64	96-178	12 - 280
TDS mg/L		160-738	262-3340 (280)	782-3046	226-568	1180 - 7914
EC umhos/com		473- 1226.8 (500)	77-556 (350)	79-2650 (1900)	356-974 (500)	1100 - 3400
Arsenic ug/L	50 (acute)	4	30		< 1-< 2	
Calcium mg/L		91-109	61	139-414 (355)	25.9-101 (45)	114 – 488 (149)
Chloride mg/L	250	1-5	3	1-20 (1-2)	0.4-7.17 (1.5)	2 - 37
Iron, dissolved ug/L	300	30-80	20	U-20	< 3 - 160 (< 10)	20
Lead, dissolved ug/L	~79.43 (acute) ~3.095 (chronic)	2	1		< 1	
Magnesium, dissolved mg/L		35-47	10.6	58.7- 235 (60-80)	5.6- 41.8 (23)	82 - 720
Manganese, dissolved ug/L	50	21.3-29.3		76- 95	1.5- 403 (< 10)	90
Mercury, dissolved ug/L	0.01 (chronic)				< 0.01 -< 0.2	
Nitrate mg/L	10	<0.02-0.7	U	0.05-0.13		U – 1.09
Nitrite mg/L	0.05	U-0.01	U	U	0.002-0.013 (0.01)	U – 0.02
Phosphate (ortho) mg/L		0.02-0.03	0.04	U-0.02	0.005-0.05 (0.01)	0.02
Potassium mg/L		2.8-5	6.6	4.3-7.5	0.5-3.25 (2.4)	2.6 – 15
	State Standard	Antelope Crk	Cow Gulch	Deer Creek	Muddy Creek	Pinto Crk
Selenium ug/L	4.6 (chronic) 18.4 (acute)	U-2	2	6-23	1-3	2 - 7
Sodium mg/L		44-73	22.2	29-120 (30)	7.76-58.2 (22)	80- 566
Sulfate mg/L	250- water supply	160-296	36	650-2492	35.6-367 (120)	358 – 4882

The streams generally have low metal concentrations and are meeting state standards. Pinto Creek and Muddy Creek may have concerns with manganese. Muddy Creek's earlier manganese concentrations were well below the state standards, but in 1998 (and once in 2002), concentrations peaked. Deer Creek and Pinto Creek also may have excessive Selenium concentrations. The source of selenium is the local soils, and private irrigation practices appear to flush the selenium from the soil.

There is no numerical standard for stream sediments. Due to the different landforms and types of channels, natural sediment loads vary. The BLM has been working with the Colorado Water Quality Control Division to apply the state's guidance in assessing streams for sediment impairment. At this time, Muddy Creek and its tributaries have not been assessed. Due to the small percentage of BLM ownership within the watershed, it has been a lower priority. As further studies determine what the natural sediment loads for the area's streams are, BLM may be able to better determine if their land uses are affecting water quality. At this time, grazing allotments are implementing best management practices to help improve watershed, and especially riparian conditions. In determining route designations, high priority was given to reduce routes adjacent to live streams and stream crossings, and routes with erosion concerns.

The Alternatives:

Acres of Road & Road density (road acres/Drainage acres)

Drainage Areas	Mean Slope	Existing	Low Use Alternative	High Use Alternative	Proposed Alternative
Cow Gulch (2404 acres)	10%	17.38 acres 0.007	9.81 acres 0.004	16.8 acres 0.007	12.97 acres 0.005
Hay Gulch (2406 acres)	8.6%	12.4 acres 0.005	6.34 acres 0.003	10.67 acres 0.004	8.08 acres 0.003
Horse Gulch (1665 acres)	7.4%	11.95 acres 0.007	7.53 acres 0.005	11.09 acres 0.007	9.93 acres 0.006
Lower Antelope (2211 acres)	8.3%	7.32 acres 0.003	5.05 acres 0.002	6.29 acres 0.003	5.45 acres 0.002
Upper Antelope (3257 acres)	8.7%	14.3 acres 0.004	10.73 acres 0.003	13.35 acres 0.004	11.79 acres 0.004
North (2885 acres)	6.0%	6.81 acres 0.002	5.98 acres 0.002	6.68 acres 0.002	6.35 acres 0.002
Anorth (1945 acres)	5.6%	11.4 acres 0.006	9.91 acres 0.005	11.03 acres 0.006	10.94 acres 0.006
East (2203 acres)	7.8%	12.55 acres 0.006	10.7 acres 0.005	12.15 acres 0.006	11.13 acres 0.005
MtnResv (2288 acres)	11.1%	21.52 acres 0.009	13.42 acres 0.006	21 acres 0.009	18.76 acres 0.008
Eastresv (2624 acres)	7.6%	9.80 acres 0.004	6.3 acres 0.002	8.62 acres 0.003	6.34 acres 0.002
Pickering (2013 acres)	9.0%	7.20 acres 0.004	4.35 acres 0.002	7.61 acres 0.004	5.4 acres 0.003

Drainage Areas	Mean Slope	Existing	Low Use Alternative	High Use Alternative	Proposed Alternative
StarGulch (1758 acres)	6.5%	7.68 acres 0.004	5.61 acres 0.003	7.21 acres 0.004	6.5 acres 0.004
Troublesome (895 acres)	4.9%	0.64 acres 0.001	0.59 acres 0.001	0.64 acres 0.001	0.59 acres 0.001
Horse Pasture (718 acres)	7.4%	4.15 acres 0.006	2.14 acres 0.003	4.13 acres 0.006	2.62 acres 0.004
MineShaft (952 acres)	8.0%	7.24 acres 0.008	6.78 acres 0.007	12.19 acres 0.013	9.84 acres 0.01
2West (1401 acres)	5.6%	4.94 acres 0.004	3.98 acres 0.003	4.8 acres 0.003	4.69 acres 0.003
WestResv (1573 acres)	5.8%	4.53 acres 0.003	3.54 acres 0.002	4.54 acres 0.003	4.36 acres 0.003
West (2758 acres)	5.3%	8.87 acres 0.003	5.76 acres 0.002	6.57 acres 0.002	6.39 acres 0.002
Red Dirt (1044 acres)	7.5%	1.44 acres 0.001	0.58 acres 0.001	1.35 acres 0.001	0.83 acres 0.001
127 (671 acres)	5%	7.54 acres 0.011	5.90 acres 0.009	7.54 acres 0.011	6.71 acres 0.010
Belowres (3063 acres)	11.1%	11.4 acres 0.004	7.30 acres 0.002	9.39 acres 0.003	9.29 acres 0.003
Cliffs (822 acres)	7.7%	8.22 acres 0.01	5.01 acres 0.006	7.62 acres 0.009	5.22 acres 0.006
Colorado (1702 acres)	6.1%	8.39 acres 0.005	5.94 acres 0.003	8.1 acres 0.005	6.59 acres 0.004

For all of the hydrologic response units, the routes were summarized by soil type and alternative. These were then totaled for the drainage unit and are shown in the above table. The table does not indicate where seasonal restrictions or limits in road use were applied, however, nor does it show the acreage that is outside of BLM management (private, state, and county roads). When reviewing the overlays and tables, it appeared that route location was more significant then route density, especially with the current levels of use. None of the road acreages alone were large enough to increase or alter expected runoff. For comparison, road densities were also calculated by the linear distance (miles of road/sq mile of drainage area). In looking at literature, these road densities (mile/sq mile) apply more to urban or suburban settings, where use levels and widths are greater. Motorcycle widths, for example, are not part of many of the analyses. Once again, seasonal limitations or administrative use only roads are not reflected in the densities. Also, road "growth" due to braiding or increased use is not reflected in this number. Many of the existing roads are motorcycle trails, which have the linear distance, but fail to expose a wide expanse of soil to erosion. The table below, however, provides linear road densities for comparisons to other plans and literature. Both types of densities, along with the individual hydrologic response unit's soils, slopes, and densities, were used to help prioritize monitoring.

Road Density (Road mile/Drainage sq mile)

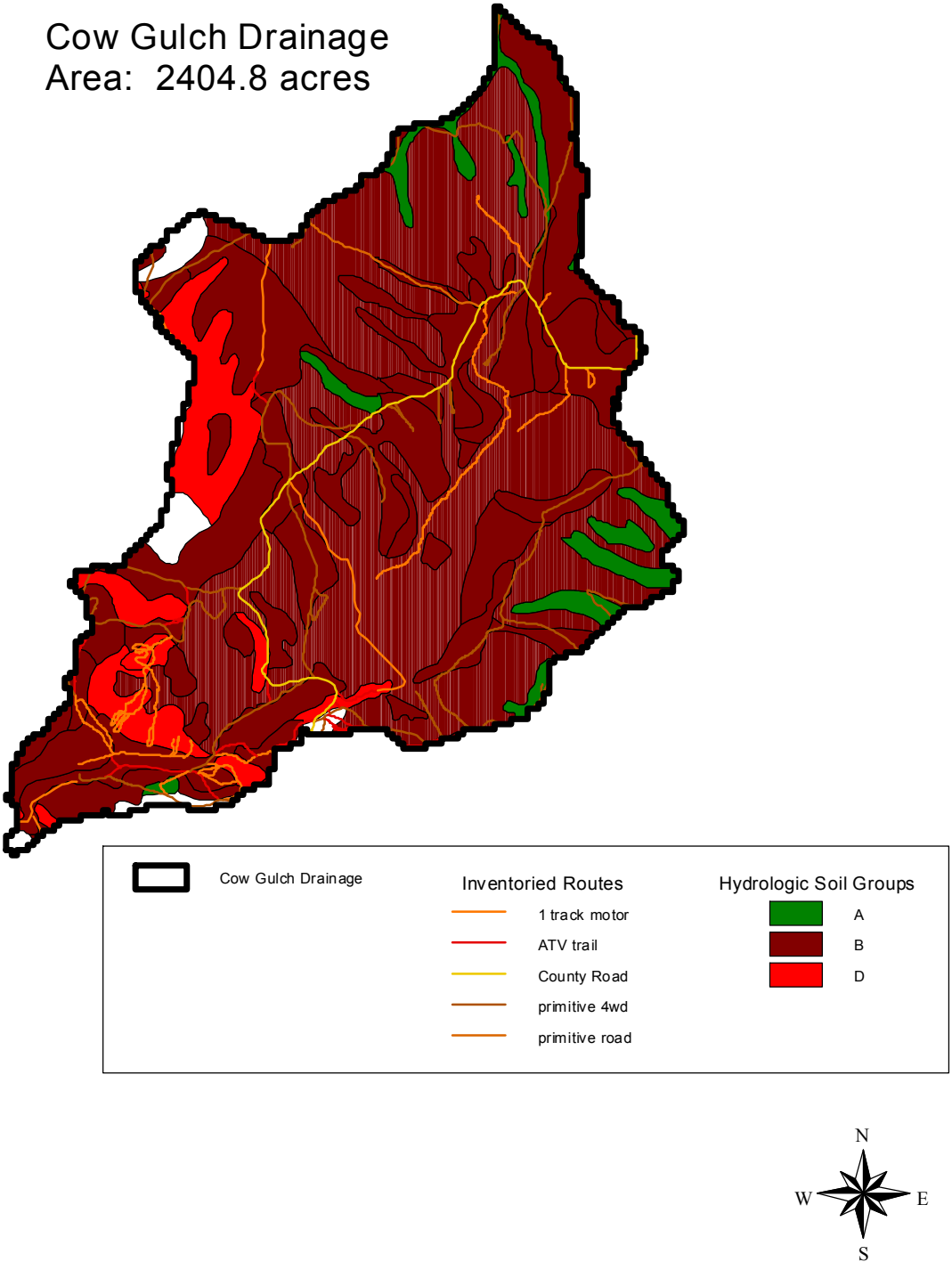
Drainage Areas	Mean Slope	Existing	Low Use Alternative	High Use Alternative	Proposed Alternative
Cow Gulch	10%	4.8	0.65	1.36	0.83
Hay Gulch	8.6%	4.64	2.11	4.09	3.07
Horse Gulch	7.4%	7.15	4.26	6.69	5.85
Lower Antelope	8.3%	2.45	1.63	2.23	1.83
Upper Antelope	8.7%	3.04	1.89	2.75	2.36
North	6.0%	2.32	2.04	2.37	2.25
Anorth	5.6%	4.47	3.71	4.31	4.26
East	7.8%	4.59	3.11	3.53	3.23
Eastresv	7.6%	3.08	1.97	1.97	1.94
MtnResv	11.1%	5.04	0.96	4.69	3.68
Pickering	9.0%	3.63	2.28	3.99	2.83
Star Gulch	6.5%	3.31	2.17	3.01	2.60
Troublesome	4.9%	0.73	0.68	0.73	0.68
Horse Pasture	7.4%	6.68	3.05	6.19	4.16
MineShaft	8.0%	13.31	6.27	12.47	11.03
2West	5.6%	3.23	2.51	3.13	3.05
WestResv	5.8%	1.57	0.91	1.57	1.46
West	5.3%	1.81	1.49	1.81	1.74
Red Dirt	7.5%	1.36	0.50	1.28	0.75
127	5%	10.30	7.89	10.16	8.19
Belowres	11.1%	2.61	2.32	3.06	2.92
Cliffs	7.7%	11.47	11.11	19.6	13.59
Colorado	6.1%	5.5	4.28	5.3	4.37

Reviewing the four route designations for watershed concerns was improved by separating out the type of road rather than just densities. For example, to compare the actual conditions on the ground, soils and route types are shown for the three drainages of Hay Gulch, Cow Gulch and Horse Gulch.

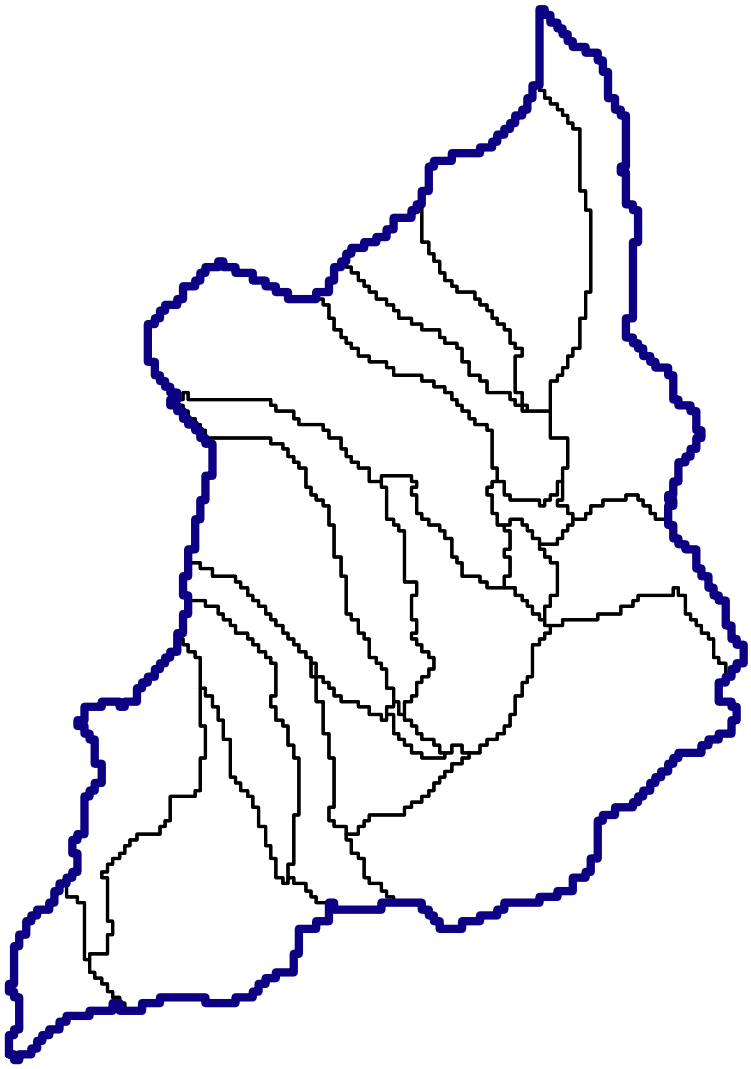
Hydrologic Soil Groups and Route Types by Alternative:

	Existing (41.7 acres of routes)	Alternative B (23.7 acres of routes)	Alternative D (38.6 acres of routes)	Proposed (30.98 acres of routes)
County, State, or Private Roads	0.03 acres "A" 9.97 acres "B" 0.85 acres "D" 0.89 acres "Rock" (11.74 acres)	0.03 acres "A" 9.97 acres "B" 0.85 acres "D" 0.89 acres "Rock" (11.74)	0.03 acres "A" 9.97 acres "B" 0.85 acres "D" 0.89 acres "Rock" (11.74 acres)	0.03 acres "A" 9.97 acres "B" 0.85 acres "D" 0.89 acres "Rock" (11.74 acres)
Administrative or Seasonal Use		0.4 acres "A" 5.35 acres "B" 0.09 acres "C" 0.4 acres "D" 0.1 acres "Rock" (6.34 acres)	2.54 acres "B" 0.05 acres "C" 0.46 acres "D" 0.06 acres "Rock" (3.11 acres)	1.62 acres "B" 0.33 acres "D" 0.06 acres "Rock" (2.01 acres)
Open Routes	1.48 acres "A" 24.29 acres "B" 0.2 acres "C" 3.09 acres "D" 0.9 acres "Rock" (29.96 acres)	1.5 acres "A" 3.6 acres "B" 0.06 acres "C" 0.35 acres "D" 0.13 acres "Rock" (5.6 acres)	2.25 acres "A" 18.36 acres "B" 0.15 acres "C' 2.08 acres "D" 0.87 acres "Rock" (23.7 acres)	1.73 acres "A" 13.88 acres "B" 0.08 acres "C" 0.98 acres "D" 0.56 acres "Rock" (17.23 acres)

Although the road acreage under the Proposed Action is more than double the Low Use Alternative, it primarily occurs on B soils. More than 60% of the existing routes on D soils and Cryorthent/Rock outcrop complexes are no longer "open" designations. The Proposed Action focused on reducing routes on steep, or erosive, or problematic areas while still providing recreational use.



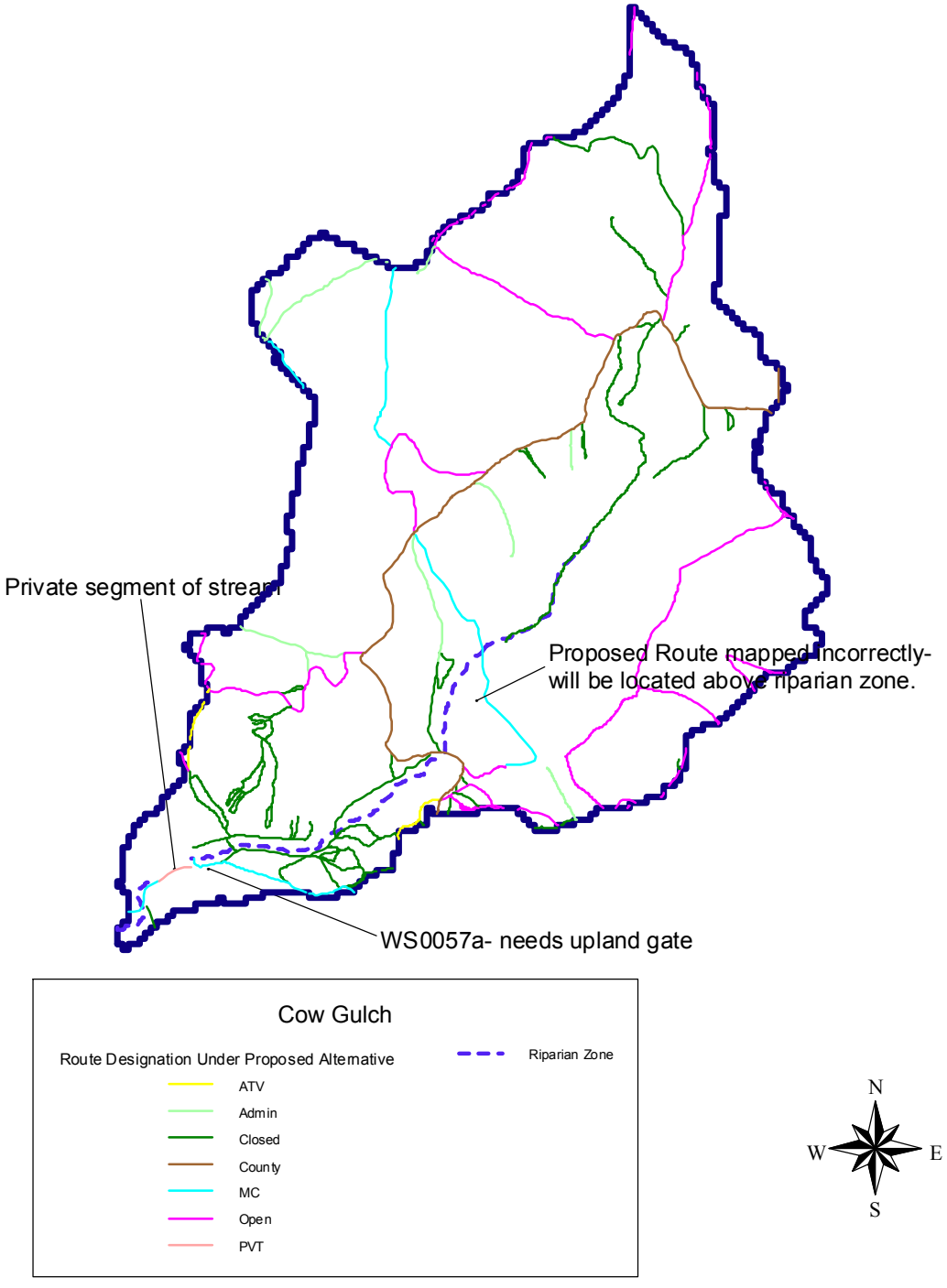
Appendix 5, Map G



Cow Gulch Drainage Area with Hydrologic Response Units

Appendix 5, Map H

Proposed Alternative's Route Designations for Cow Gulch



Appendix 5, Map I